MODELS | SJ 6826RT SJ 6832RT

Service Manual

Compact Rough Terrain Scissors

Part No. 143899AD February 2014

SKYJACK™

This manual is based on Serial Number(s):

SJ 68XXRT 37,002,164 to 37,002,787

Please refer to the website (www.skyjack.com) for older Serial Numbers.

Skyjack Service Center
3451 Swenson Ave. St. Charles,
Illinois, 60174 USA
Phone: 630-262-0005
Toll Free: 1-800-275-9522
Fax: 630-262-0006
Email: service@skyjack.com

Parts (North America)
Toll Free: 1-800-965-4626
Toll Free Fax: 1-888-782-4825
E-mail: parts@skyjack.com

Skyjack Australia Pty Ltd.
4 Coates Place
Wetherill Park
New South Wales 2164
Australia
Tel: +61 (0) 28786 3200
Fax: +61(0) 28786 3222

Parts & Service (Europe)
Unit 1 Maes Y Clawdd
Maesbury Road Industrial Estate
Oswestry, Shropshire SY10 8NN UK
Phone: +44-1691-676-235
Fax: +44-1691-676-238
E-mail: info@skyjackeurope.co.uk

Skyjack Brasil
Alameda Júpiter, 710
Loteamento American Park Empresarial
Indaiatuba, SP, Brasil 13347-653
Tel: +55 19 3936 0132

SERVICE AND MAINTENANCE

Table of Contents

Section 1 - Scheduled Maintenance
Table of Contents

Section 2 - Maintenance Tables
Table of Contents

Section 3 - Schematics
Table of Contents

Section 4 - Troubleshooting
Table of Contents

Section 5 - Procedures
Table of Contents

The Safety Alert Symbol identifies important safety messages on aerial platforms, safety signs in manuals or elsewhere. When you see this symbol, be alert to the possibility of personal injury or death. Follow the instructions in the safety message.

This Safety Alert Symbol means attention!

Become alert! Your safety is involved.

DANGER

DANGER indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

IMPORTANT

IMPORTANT indicates a procedure) essential for safe operation and which, if not followed, may result in a malfunction or damage to the aerial platform.

Section 1
SCHEDULE MAINTENANCE

Table of Contents

Operator's Responsibility for Maintenance

Aerial Platform Definition....7
Purpose of Equipment....7
Use of Equipment....7
Manuals....7
Operator....7
Service Policy and Warranty....7
Optional Accessories....7
Scope of this Manual....8
Operator Safety Reminders....9
Electrocution Hazard....9
Safety Precautions....10
Maintenance and Inspection Schedule....13
Owner's Annual Inspection Record....13
Replacement Parts....13
Maintenance and Service Safety Tips....13
Hydraulic System & Component Maintenance and Repair....14
Maintenance Hints....14

Service and Maintenance

About this Section....15
Service Bulletins....15
Maintenance and Inspection....15
Maintenance Instructions....15

Schedule Maintenance Inspections

1.1 Scheduled Maintenance Inspections....18
1.2 Function Tests....27

Tables

1.1 Owner's Annual Inspection Record....16
1.2 Maintenance and Inspection Checklist....17

SKYJACK is continuously improving and expanding product features on its equipment, therefore, specifications and dimensions are subject to change without notice.

Aerial Platform Definition
A mobile device that has an adjustable position platform supported from ground level by a structure.

Purpose of Equipment
The SKYJACK Rough Terrain's mid and full size aerial platforms are designed to transport and raise personnel, tools and materials to overhead work areas.

Use of Equipment
The aerial platform is a highly maneuverable, mobile work station. Lifting and driving must be on a flat, level, compacted surface. It can be driven over uneven terrain only when the platform is fully lowered.

Manuals
Operating
The operating manual is considered a fundamental part of the aerial platform. It is a very important way to communicate necessary safety information to users and operators. A complete and legible copy of this manual must be kept in the provided weather-resistant storage compartment on the aerial platform at all times.

Service & Maintenance
The purpose of this is to provide the customer with the servicing and maintenance procedures essential for the promotion of proper machine operation for its intended purpose.

All information in this manual should be read and understood before any attempt is made to service the machine. The updated copy of the manuals are found on the company's website: www.skyjack.com.

Operator
The operator must read and completely understand both this operating manual and the safety panel label located on the platform and all other warnings in this manual and on the aerial platform. Compare the labels on the aerial platform with the labels found within this manual. If any labels are damaged or missing, replace them immediately.

Service Policy and Warranty
SKYJACK warrants each new SJRT series work platform to be free of defective parts and workmanship for the first 24 months. Any defective part will be replaced or repaired by your local SKYJACK dealer at no charge for parts or labor. Contact the SKYJACK Service Department for warranty statement extensions or exclusions.

Optional Accessories
The SKYJACK aerial platform is designed to accept a variety of optional accessories. These are listed under "Standard and Optional Features" in Table 2.1 of the operating manual. Operating instructions for these options (if equipped) are located in section 2 of the operating manual.

For non-standard components or systems, contact the SKYJACK Service Department at

North America & Asia:
☎ : 800 275-9522
🖷 : 630 262-0006

Europe:
☎ : 44 1691-676-235
🖷 : 44 1691-676-239

Include the model and serial number for each applicable aerial platform.

Scope of this Manual

a. **This manual** applies to the ANSI/SIA, CSA and CE versions of the Mid Size and Full Size Rough Terrain aerial platform models listed on Table 2.1.

- Equipment identified with "ANSI" meets the ANSI SIA-A92.6-2006 standard.
- Equipment identified with "CSA" meets the CSA B354.2-01 standard.
- Equipment identified with "CE" meets the requirements for the European countries, i.e., Machinery Directive 98/37/EC and/or 89/392/EE, EMC Directive 89/336/EEC, Directive 2000/14/EC and the corresponding EN standards.

b. **CSA (Canada) and CE (Europe)**
Operators are required to conform to national, territorial/provincial and local health and safety regulations applicable to the operation of this aerial platform.

c. **ANSI/SIA (United States)**
Operators are required by the current ANSI/SIA A92.6 standards to read and understand their responsibilities in the manual of responsibilities before they use or operate this aerial platform.

WARNING

Failure to comply with your required responsibilities in the use and operation of the aerial platform could result in death or serious injury!

Operator Safety Reminders

A study conducted by St. Paul Travelers showed that most accidents are caused by the failure of the operator to follow simple and fundamental safety rules and precautions.

You, as a careful operator, are the best insurance against an accident. Therefore, proper usage of this aerial platform is mandatory. The following pages of this manual should be read and understood completely before operating the aerial platform.

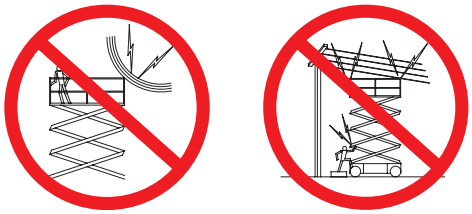
Common sense dictates the use of protective clothing when working on or near machinery. Use appropriate safety devices to protect your eyes, ears, hands, feet and body.

Any modifications from the original design are strictly forbidden without written permission from SKYJACK.

Electrocution Hazard

This aerial platform is not electrically insulated. Maintain a Minimum Safe Approach Distance (MSAD) from energized power lines and parts as listed below. The operator must allow for the platform to sway, rock or sag. This aerial platform does not provide protection from contact with or proximity to an electrically charged conductor.

DO NOT USE AERIAL PLATFORM AS A GROUND FOR WELDING.
DO NOT OPERATE AERIAL PLATFORM DURING LIGHTNING OR STORMS.



DANGER
Avoid Power Lines

Minimum Safe Approach Distance

ANSI/SIA A92.6-2006 and CSA B354.2-01 Requirements		CE Guidance Note "Avoidance of danger from overhead lines"
Voltage Range (Phase to Phase)	**Minimum Safe Approach Distance (Feet)**	**Adhere strictly to the governmental rulings and regulations applicable in your country.**
0 to 300V	Avoid Contact	
Over 300V to 50KV	10	
Over 50KV to 200KV	15	
Over 200KV to 350KV	20	
Over 350KV to 500KV	25	
Over 500KV to 750KV	35	
Over 750KV to 1000KV	45	

FAILURE TO AVOID THIS HAZARD WILL RESULT IN DEATH OR SERIOUS INJURY!

60023AD

Safety Precautions

Know and understand the safety precautions before going on to next section.

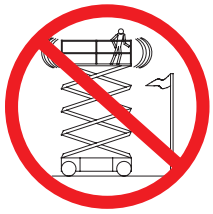
WARNING

Failure to heed the following safety precautions could result in tip over, falling, crushing, or other hazards leading to death or serious injury.

- **KNOW** all national, state/provincial and local rules which apply to your aerial platform and jobsite.
- **TURN** the (emergency) main power disconnect switch off when leaving the aerial platform unattended. Remove the key to prevent unauthorized use of the aerial platform.
- **WEAR** all the protective clothing and personal safety devices issued to you or called for by job conditions.
- **DO NOT** wear loose clothing, dangling neckties, scarves, rings, wristwatches or other jewelry while operating this aerial platform.

- **AVOID** entanglement with ropes, cords or hoses.

- **AVOID** falling. Stay within the boundaries of the guardrails.
- **DO NOT** raise the aerial platform in windy or gusty conditions.

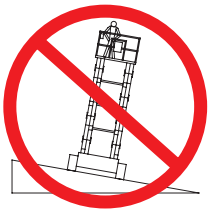


- **DO NOT** increase the lateral surface area of the platform. Increasing the area exposed to the wind will decrease aerial platform stability.

- **DO NOT** drive or elevate the aerial platform if it is not on a firm level surface. Do not drive elevated near depressions or holes of any type, loading docks, debris, drop-offs and surfaces that may affect the stability of the aerial platform.

- **If operation in areas with holes or drop-offs is absolutely necessary**, elevated driving shall not be allowed. Position the aerial platform horizontally only with the platform fully lowered. After ensuring that all 4 wheels or outriggers (if equipped) have contact with level firm surface, the aerial platform can be elevated. After elevation, the drive function must not be activated.

- **Elevated driving** must only be done on a firm level surface.



- **DO NOT** ascend or descend a grade when elevated. When fully lowered, ascending or descending, only grades up to rated maximum listed in Table 2.1 are permissible.

- **DO NOT** operate on surfaces not capable of holding the weight of the aerial platform including the rated load, e.g. covers, drains, and trenches.

Safety Precautions (Continued)

Know and understand the safety precautions before going on to next section.

- **DO NOT** operate an aerial platform that has ladders, scaffolding or other devices mounted on it to increase its size or work height. It is prohibited.

- **DO NOT** exert side forces on aerial platform while elevated.

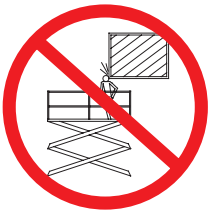
- **DO NOT** use the aerial platform as a crane. It is prohibited.

- **DO NOT** sit, stand or climb on the guardrails. It is prohibited.

- **DO NOT** climb on scissor arm assembly. It is prohibited.

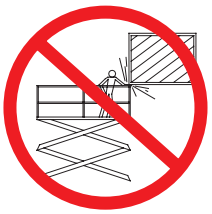
- **BE AWARE** of overhead obstructions or other possible hazards around the aerial platform when driving or lifting.

- **DO NOT** raise the platform while the aerial platform is on a truck, fork lift or other device or vehicle.

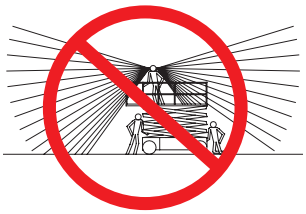


- **BE AWARE** of crushing hazards. Keep all body parts inside platform guardrail.

- **DO NOT** lower the platform unless the area below is clear of personnel and obstructions.



- **ENSURE** that there are no personnel or obstructions in the path of travel, including blind spots.



- **BE AWARE** of blind spots when operating the aerial platform.

- **STUNT** driving and horseplay are prohibited.

- **ENSURE ALL** tires are in good condition and lug nuts are properly tightened.

- **DO NOT** alter or disable limit switches or other safety devices.

- **DO NOT** use the aerial platform without guardrails, locking pins and the entry gate/chain/bar in place.

Safety Precautions (Continued)

Know and understand the safety precautions before going on to next section.

- **DO NOT** exceed the rated capacity of the aerial platform. Do make sure the load is evenly distributed on the platform.
- **DO NOT** attempt to free a snagged platform with lower controls until personnel are removed from the platform.
- **DO NOT** position the aerial platform against another object to steady the platform.
- **DO NOT** place materials on the guardrails or materials that exceed the confines of the guardrails unless approved by Skyjack.

Fall Protection

As per the ANSI A92.6-2006 standard, "The guardrail system of the aerial platform provides fall protection. If occupant(s) of the platform are required to wear personal fall protection equipment (PFPE), occupants shall comply with instructions provided by the aerial platform manufacturer (remanufacturer) regarding anchorage(s)."

If additional fall protection is required, by an employer or the authority having jurisdiction, Skyjack recommends the use of a fall restraint system to keep an occupant within the confines of the platform, and thus not expose the occupant to any fall hazard requiring a fall arrest.

All personal fall protection equipment must comply with applicable governmental regulations and must be inspected and used in accordance with the manufacturer's recommendations.

All personal fall protection equipment must be attached only to approved anchorage points within the platform of the aerial platform.

WARNING

Entering and exiting the aerial platform should only be done using the three points of contact.

- Use only equipped access openings.
- Enter and exit only when the aerial platform is in the fully retracted position.

- Do use three points of contact to enter and exit the platform. Enter and exit the platform from the ground only. Face the aerial platform when entering or exiting the platform.
- Three points of contact means that two hands and one foot or one hand and two feet are in contact with the aerial platform or the ground at all times during entering and exiting.

WARNING

An operator should not use any aerial platform that:

- does not appear to be working properly.
- has been damaged or appears to have worn or missing parts.
- has alterations or modifications not approved by the manufacturer.
- has safety devices which have been altered or disabled.
- has been tagged or blocked out for non-use or repair.

Failure to avoid these hazards could result in death or serious injury.

Jobsite Inspection

- Do not use in hazardous locations.
- Perform a thorough jobsite inspection prior to operating the aerial platform, to identify potential hazards in your work area.
- Be aware of moving equipment in the area. Take appropriate actions to avoid collision.

Maintenance and Inspection Schedule

The actual operating environment of the work platform governs the use of the maintenance schedule. The inspection points covered in Table 1.2. Maintenance and Inspection Checklist, indicates the areas of the aerial platform to be maintained or inspected and at what intervals the maintenance and inspections are to be performed.

Owner's Annual Inspection Record

It is the responsibility of the owner to arrange quarterly and annual inspections of the aerial platform. Table 1.1. Owner's Annual Inspection Record is to be used for recording the date of the inspection, owner's name, and the person responsible for the inspection of the work platform.

Replacement Parts

Use only original replacement parts. Parts such as batteries, wheels, railings, etc. with weight and dimensions different from original parts will affect stability of the work platform and must not be used without manufacturer's consent.

Use only original filled tires for models which must be so equipped. Consult factory.

All replacement tires must be of the same size and load rating as original equipment to maintain safety and stability of the work platform. Consult factory.

WARNING

Any unit that is damaged or not operating properly must be immediately tagged and removed from service until proper repairs are completed.

Maintenance and Service Safety Tips

Maintenance and repair should only be performed by personnel who are trained and qualified to service this aerial platform.

All maintenance and service procedures should be performed in a well lighted and well ventilated area.

Anyone operating or servicing this aerial platform must read and completely understand all operating instructions and safety hazards in this manual and operating manual.

All tools, supports and lifting equipment to be used must be of proper rated load and in good working order before any service work begins. Work area should be kept clean and free of debris to avoid contaminating components while servicing.

All service personnel must be familiar with employer and governmental regulations that apply to servicing this type of equipment.

Keep sparks and flames away from all flammable or combustible materials.

Properly dispose of all waste material such as lubricants, rags, and old parts according to the relative law provisions obtaining in the country.

Before attempting any repair work, turn Battery Disconnect Switch to the "OFF" position.

Preventive maintenance is the easiest and least expensive type of maintenance.

Hydraulic System & Component Maintenance and Repair

The following points should be kept in mind when working on the hydraulic system or any component:

1. Any structure has limits of strength and durability. To prevent failure of structural parts of hydraulic components, relief valves which limit pressure to safe operating values are included in the hydraulic circuits.

2. Tolerance of working parts in the hydraulic system is very close. Even small amounts of dirt or foreign materials in the system can cause wear or damage to components, as well as general faulty operation of the hydraulic system. Every precaution must be taken to assure absolute cleanliness of the hydraulic oil.

3. Whenever there is a hydraulic system failure which gives reason to believe that there are metal particles or foreign materials in the system, drain and flush the entire system and replace the filter cartridges. A complete change of oil must be made under these circumstances.

4. Whenever the hydraulic system is drained, check the magnets in the hydraulic reservoir for metal particles. If metal particles are present, flush the entire system and add a new change of oil. The presence of metal particles also may indicate the possibility of imminent component failure. A very small amount of fine particles is normal.

5. All containers and funnels used in handling hydraulic oil must be absolutely clean. Use a funnel when necessary for filling the hydraulic oil reservoir, and fill the reservoir only through the filter opening. The use of cloth to strain the oil should be avoided to prevent lint from getting into the system.

6. When removing any hydraulic component, be sure to cap and tag all hydraulic lines involved. Also, plug the ports of the removed components.

NOTE

Samples of hydraulic oil should be drawn from the reservoir and tested annually. These samples should be taken when the oil is warmed through normal operation of the system. The sample should be analyzed by a qualified lubrication specialist to determine if it is suitable for continued use.

Oil change intervals will depend on the care used in keeping the oil clean, and the operating conditions. Dirt and/or moisture cotamination will dictate that the oil should be changed more often. Under normal use and operating conditions, the hydraulic oil should be changed every two years. Refer to Table 1.2 of this manual.

7. All hydraulic components must be disassembled in spotlessly clean surroundings. During disassembly, pay particular attention to the identification of parts to assure proper reassembly. Clean all metal parts in a clean mineral oil solvent. Be sure to thoroughly clean all internal passages. After the parts have been dried thoroughly, lay them on a clean, lint-free surface for inspection.

8. Replace all O-rings and seals when overhauling any component. Lubricate all parts with clean hydraulic oil before reassembly. Use small amounts of petroleum jelly to hold O-rings in place during assembly.

9. Be sure to replace any lost hydraulic oil when completing the installation of the repaired component, and bleed any air from the system when required.

10. All hydraulic connections must be kept tight. A loose connection in a pressure line will permit the oil to leak out or air to be drawn into the system. Air in the system can cause damage to the components and noisy or erratic system operation.

Maintenance Hints

Three simple maintenance procedures have the greatest effect on the hydraulic system performance, efficiency and life. Yet, the very simplicity of them may be the reason they are so often overlooked. What are they? Simply these:

1. Change filters annually. The filters will need to be changed more often depending on the operating conditions. Dirty, dusty, high moisture environments may cause the hydraulic system to be contaminated more quickly.
2. Maintain a sufficient quantity of clean hydraulic oil of the proper type and viscosity in the hydraulic reservoir.
3. Keep all connections tight.

About this Section

This section contains the maintenance and inspection schedule that is to be performed.

References are made to the procedures in section 5 that outline detailed step-by-step instructions for checks and replacements.

Service Bulletins

Before performing any scheduled maintenance inspection procedure, refer to service bulletins found in our web site: www.skyjack.com for updates related to service and maintenance of this aerial platform.

Maintenance and Inspection

Death or injury can result if the aerial platform is not kept in good working order. Inspection and maintenance should be performed by competent personnel who are trained and qualified on maintenance of this aerial platform.

WARNING

Failure to perform each procedure as presented and scheduled may cause death, serious injury or substantial damage.

NOTE

Preventive maintenance is the easiest and least expensive type of maintenance.

- Unless otherwise specified, perform each maintenance procedure with the aerial platform in the following configuration:
  - Aerial platform parked on a flat and level surface
  - Disconnect the battery by turning the main power disconnect switch to the “OFF” position.
- Repair any damaged or malfunction components before operating aerial platform.
- Keep records on all inspections.

Maintenance Instructions

This manual consists of four schedules to be done for maintaining on an aerial platform. Inspection schedule frequency is shown below:

Inspection Schedule

Daily	A
Frequently	A + B
Annually	A + B + C
Bi-annually	A + B + C + D

- Make copies of the maintenance and inspection checklist to be used for each inspection.
- Check the schedule on the checklist for the type of inspection to be performed.
- Place a check in the appropriate box after each inspection procedure is completed.
- Use the maintenance and inspection checklist and step-by-step procedures in section 5 to perform these inspections.
- If any inspection receives a fail, tag and remove the aerial platform from service.
- If any aerial platform component(s) has been repaired, an inspection must be performed again before removing the tag. Place a check in the repair column.

Legend

P = Pass
F = Fail
R = Repaired

Table 1.1 Owner's Annual Inspection Record

Model Number: _____					Serial Number: _____				
Recording Date									
Recording Year #	1	2	3	4	5	6	7	8	9
Owner's Name									
Inspected By									

60564AA

As described earlier in this section, this decal is located on the control compartment cowling. It must be completed after an annual inspection has been completed. Do not use the aerial platform if an inspection has not been recorded in the last 13 months.

Table 1.2 MAINTENANCE AND INSPECTION CHECKLIST

Serial Number: _____

Model: _____

Hourmeter Reading: _____ Name (Printed): _____

Date: _____

Time: _____ Signature: _____

Each item shall be inspected using the the appropriate section of the Skyjack service manual.
As each item is inspected, write the apropriate grade in the box.

P - PASS
F - FAIL
R - REPAIRED

INSPECTION FREQUENCY

- ❑ DAILY
- ❑ FREQUENTLY
- ❑ ANNUALLY
- ❑ BI-ANNUALLY

Inspection Schedule	
Daily	A
Frequently*†	A + B
Annually†	A + B + C
Bi-annually†	A + B + C + D

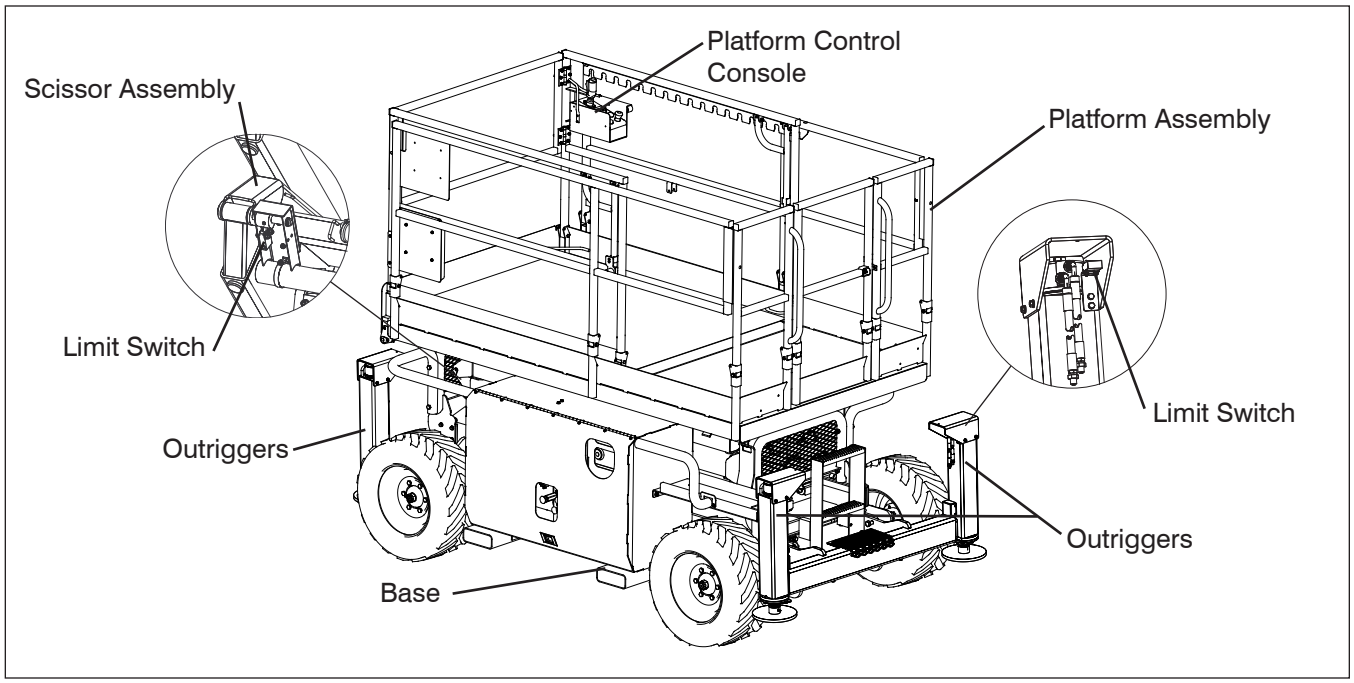
Schedule		P	F	R
Schedule Maintenance Inspections				
Labels	A			
Limit Switches	A, B			
Emergency Lowering Access Rod (If Equipped)	A, B			
Electrical and Control Components				
Main Power Disconnect Switch	A, B			
Base Control Switches	A, B			
Battery	A, B			
Manifolds	A, B, C			
Electrical Panel	A, B			
Tilt Sensor (If Equipped)	A, B			
Load/Tilt Sensor - CE	A, B			
Engine Compartment				
Engine Control Console	A, B			
Radiator	A, B, C			
Muffler and Exhaust	A, B			
Engine Tray	A, B			
Hydraulic Pump	A, B			
Engine Air Filter	A, B			
Engine Oil Level	A, B			
Engine Fuel Filter	A, B, C			
Fuel and Hydaulic Oil Supply				
Fuel Tank	A, B			
Fuel Leaks	A, B			
Hydraulic Tank	A, B, C			
Hydraulic Oil	A, B, C			
Platform Assembly				
Lanyard Attachment Anchors	A			
AC Outlet on Platform	A, B			
Platform Control Console	A, B			
Powered Extension Control Console (If Equipped)	A, B			
Lift Mechanism				
Scissor Guards (If Equipped)	A, B			
Sliders	A, B			
Maintenance Support	A, B			
Scissor Assembly	A, B			
Scissor Bumpers	A, B			
Lift Cylinder(s)	A, B			

Schedule		P	F	R
Base				
Base Weldment	A, B			
Wheel/Tire Assembly	A, B			
Axles	A, B			
Steer Cylinder Assembly	A, B			
Tie Rod	A, B			
Ladder	A, B			
Outriggers (If Equipped)	A, B			
Manual	A, B			
Function Tests				
Platform Control Console				
Test Emergency Stop	A, B			
Test Lift Enable	A, B			
Test Platform Raising/Lowering	A, B			
Test Enable Trigger Switch	A, B			
Test Steering	A, B			
Test Horn	A, B			
Test Driving	A, B			
Test Brake	A, B			
Test Speed Limit	A, B			
Test Lowering Warning - CE	A, B			
Test Powerdeck Enable (If equipped)	A, B			
Test Extension Platform(s) (If equipped)	A, B			
Test Tilt Sensor (If Equipped)	A, B			
Base Control Console				
Test Emergency Stop	A, B			
Test Base Lift Enable	A, B			
Test Lower/Neutral/Raise Switch	A, B			
Test Emergency Lowering (Models 71xx, 8831/41 & 9241)	A, B			
Test Emergency Lowering (Model 8243, 8850 & 9250)	A, B			
Test Emergnecy Powered Extension Platform Retraction Switch (Model 8850 & CE - 9250)	A, B			
Test Main Power Discconect Switch	A, B			

110AC

A - Perform Visual and Daily Maintenance Inspections & Functions Test. Refer to Section 2.7 of the Operating Manual.
B - Perform Scheduled Maintenance Inspection every three months or 150 hrs. Refer to Section 1.0 of this manual.
C - Perform Scheduled Maintenance Inspection every year. Refer to Section 1.0 of this manual.
D - Perform Scheduled Maintenance Inspection every 2 years. Refer to Section 1.0 of this manual.
***** Perform scheduled inspection every three months or 150 hours.
† Refer to Skyjack's webiste @ www.skyjack.com for latest service bulletins prior to performing quarterly or yearly inspection.

Note: Make a copy of this page or visit the Skyjack web site:www.skyjack.com for a printable copy.



1.1 Scheduled Maintenance Inspections

Begin the scheduled maintenance inspections by checking each item in sequence for the conditions listed in this section.

WARNING

To avoid injury, do not operate an aerial platform until all malfunctions have been corrected.

WARNING

To avoid possible injury, ensure aerial platform power is off during your visual and daily maintenance inspections.

Electrical

Maintaining the electrical components is essential to good performance and service life of the aerial platform.

Inspect the following areas for chafed, corroded and loose wires:

- base to platform cables and wiring harness
- engine compartment electrical panel
- engine wiring harness
- hydraulic/electrical wiring harnesses

Hydraulic

Maintaining the hydraulic components is essential to good performance and service life of the aerial platform.

Perform a visual inspection around the following areas:

- hydraulic tank filter, fittings, hoses, emergency power unit (if equipped) and base surfaces
- engine compartment fittings, hoses, main pump, and filter
- all hydraulic cylinders
- all hydraulic manifolds
- the underside of the base
- ground area under the aerial platform
- outriggers

1.1-1 Labels

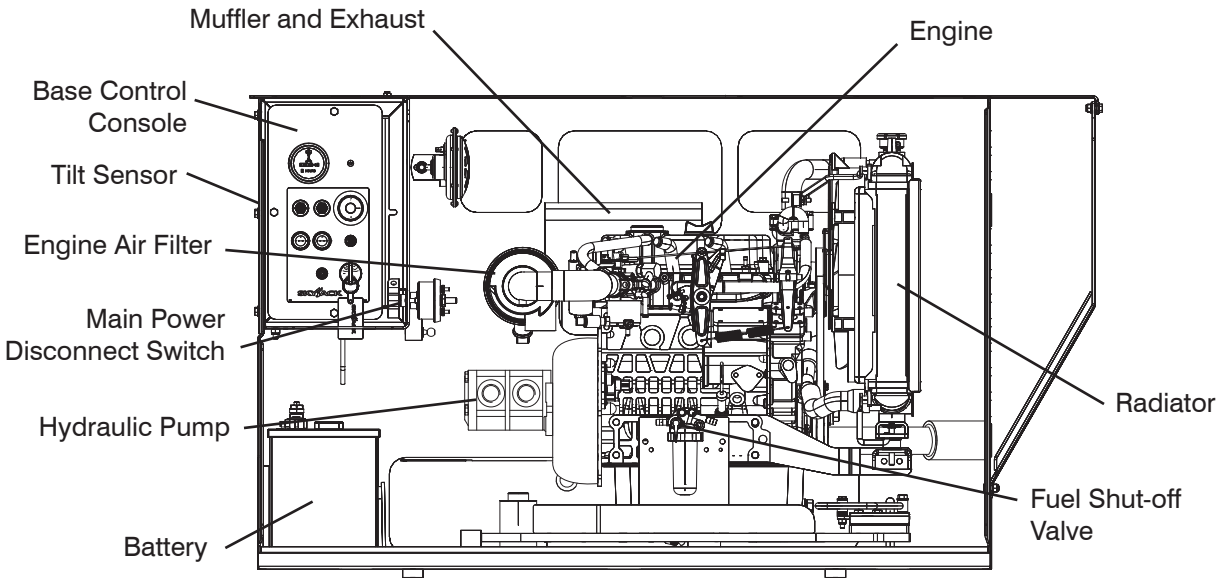
Refer to the labels section in this manual and determine that all labels are in place and are legible.

1.1-2 Limit Switches

Detecting limit switch malfunction is essential to safe aerial platform operation. Ensure limit switches are properly secured with no signs of visible damage and movement is not obstructed.

Visually inspect all limit switch located inside the scissor arms and the outrigger assemblies for the following:

- broken or missing actuator arm
- missing fasteners
- loose wiring



1.1-4 Engine Component

- Ensure compartment latch is secure and in proper working order.

- **Main Power Disconnect Switch**
  - Turn main power disconnect switch to "◯" off position.
  - Ensure all cables are secure and switch is in proper working condition.

- **Base Control Switches**
  - Ensure there are no signs of visible damage and all switches are in their neutral positions.

- **Tilt Sensor**
  - Ensure tilt sensor is properly secure and there is no visible damage.

- **Battery**
  Proper battery condition is essential to good performance and operational safety. Improper fluid levels or damaged cables and connections can result in component damage and hazardous conditions.

WARNING

Explosion hazard. Keep flames and sparks away. Do not smoke near batteries.

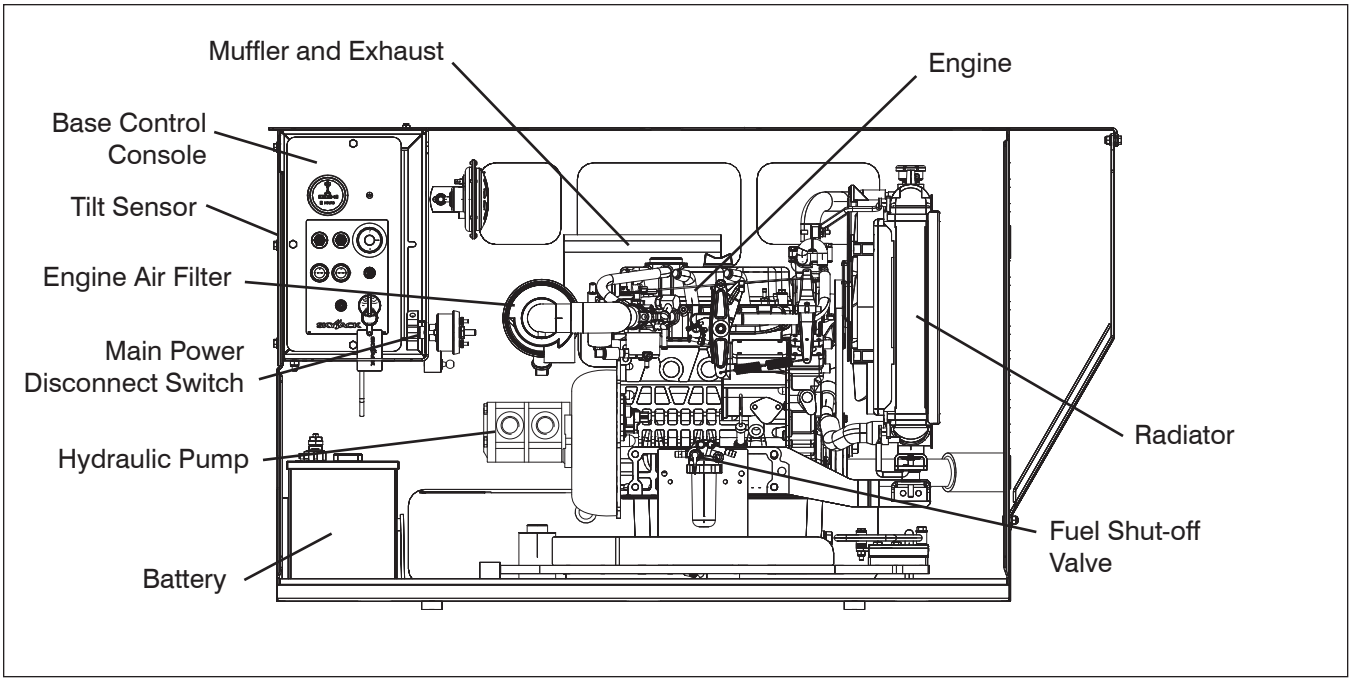
WARNING

Battery acid is extremely corrosive - Wear proper eye and facial protection as well as appropriate protective clothing. If contact occurs, immediately flush with cold water and seek medical attention.

1. Check battery case for damage.
2. Clean battery terminals and cable ends thoroughly with a terminal cleaning tool or wire brush.
3. Ensure all battery connections are tight.
4. If applicable, check battery fluid level. If plates are not covered by at least 1/2" (13 mm) of solution, add distilled or demineralized water.
5. Replace battery if damaged or incapable of holding a lasting charge.

WARNING

Use original or manufacturer-approved parts and components for the aerial platform.



- **Hydraulic Pump**
  - Ensure there are no loose or missing parts and there is no visible damage.
  - Ensure all bolts are properly tightened.
  - Ensure all fittings and hoses are properly tightened and there is no evidence of hydraulic leakage.
- **Radiator**
  - Ensure radiator is secure.
  - Ensure there are no loose or missing parts and there is no visible damage.
  - Check coolant level and add as needed.
- **Muffler and Exhaust**
  - Ensure muffler and exhaust system are properly secured, with no evidence of damage.
- **Engine Pivot Tray**
  - Ensure there are no loose or missing parts and no visible damage to the engine pivot tray. Ensure that both tray-securing bolts are in place.
- **Engine Oil Level**
  - Maintaining the engine components is essential to good performance and service life of the aerial platform.

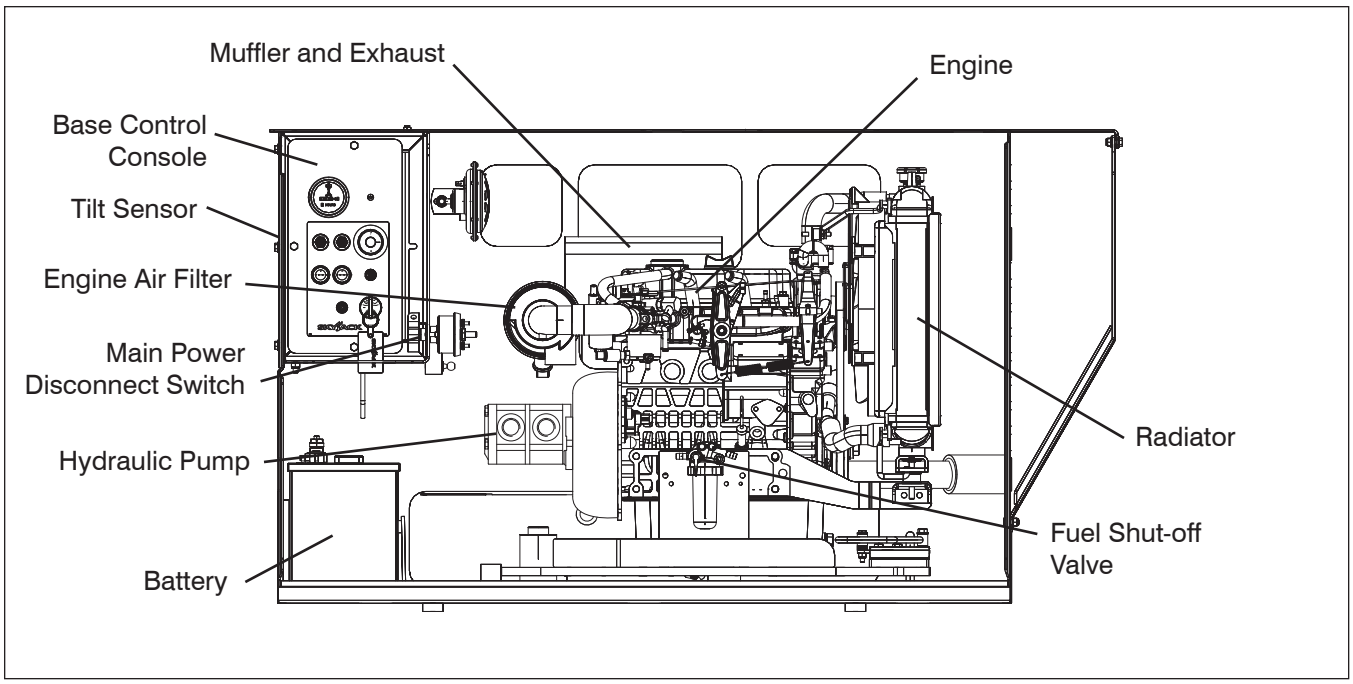
WARNING

Beware of hot engine components.

Check oil level on dipstick

- Oil level should be in the “safe” zone. Add oil as needed.

- **Fuel Shut-off Valve**
  - Ensure there are no loose or missing parts and there is no visible damage.
- **Engine Air Filter**
  - Ensure there are no loose or missing parts and there is no visible damage.



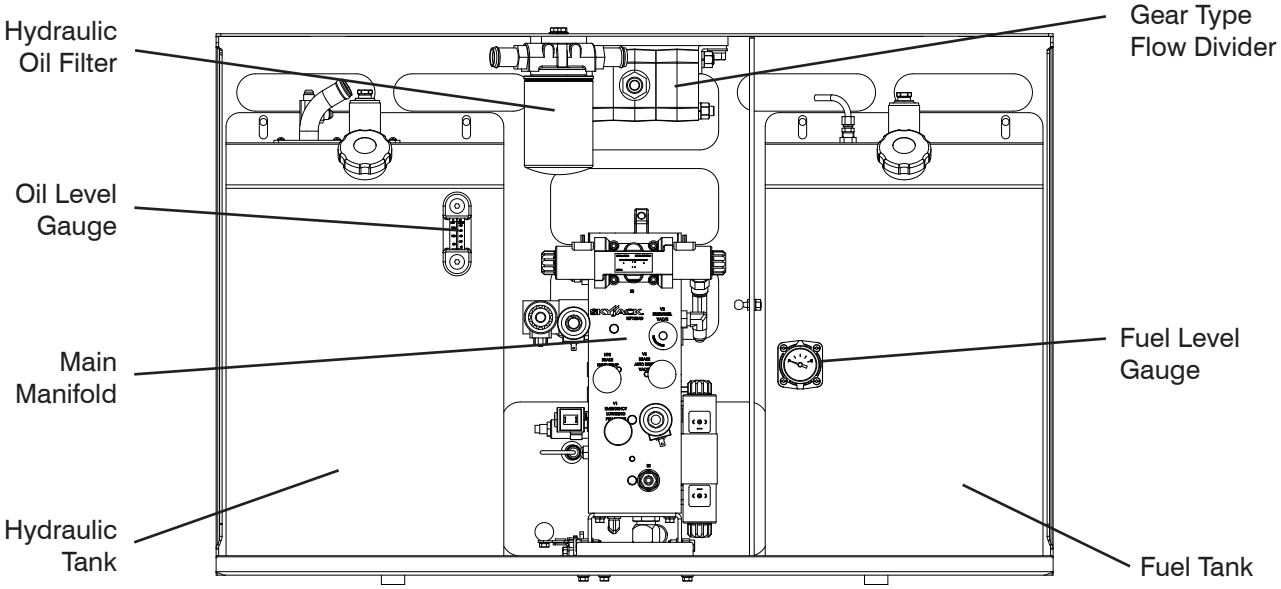
- **Fuel Leaks**
  Failure to detect and correct fuel leaks will result in an unsafe condition. An explosion or fuel fire may cause death or serious injury.

DANGER

Engine fuels are combustible. Inspect the aerial platform in an open, well-ventilated area away from heaters, sparks and flames. Always have an approved fire extinguisher within easy reach.

Perform a visual inspection around the following areas:

- hoses and fittings
- fuel pump
- fuel filter



2.8-6Hydraulic/Fuel Compartment

- Ensure compartment latch is secure and in proper working order.

- **Hydraulic Tank**
  - Ensure hydraulic filler cap is secure.
  - Ensure tank shows no visible damage and no evidence of hydraulic leakage.
- **Hydraulic Oil**
  - Ensure platform is fully lowered, and then visually inspect the sight gauge located on the side of the hydraulic oil tank.
  - The hydraulic oil level should be at or slightly above the top mark of the sight glass.
- **Hydraulic Return Filter**
  - Ensure filter element is secure.
  - Ensure there are no signs of leakage or visible damage.
- **Fuel Tank**

IMPORTANT
Before using your aerial platform ensure there is enough fuel for expected use.

- Ensure fuel filler cap is secure.
- Ensure tank shows no visible damage and no evidence of fuel leakage.

- **Fuel Leaks**
  Failure to detect and correct fuel leaks will result in an unsafe condition. An explosion or fuel fire may cause death or serious injury.

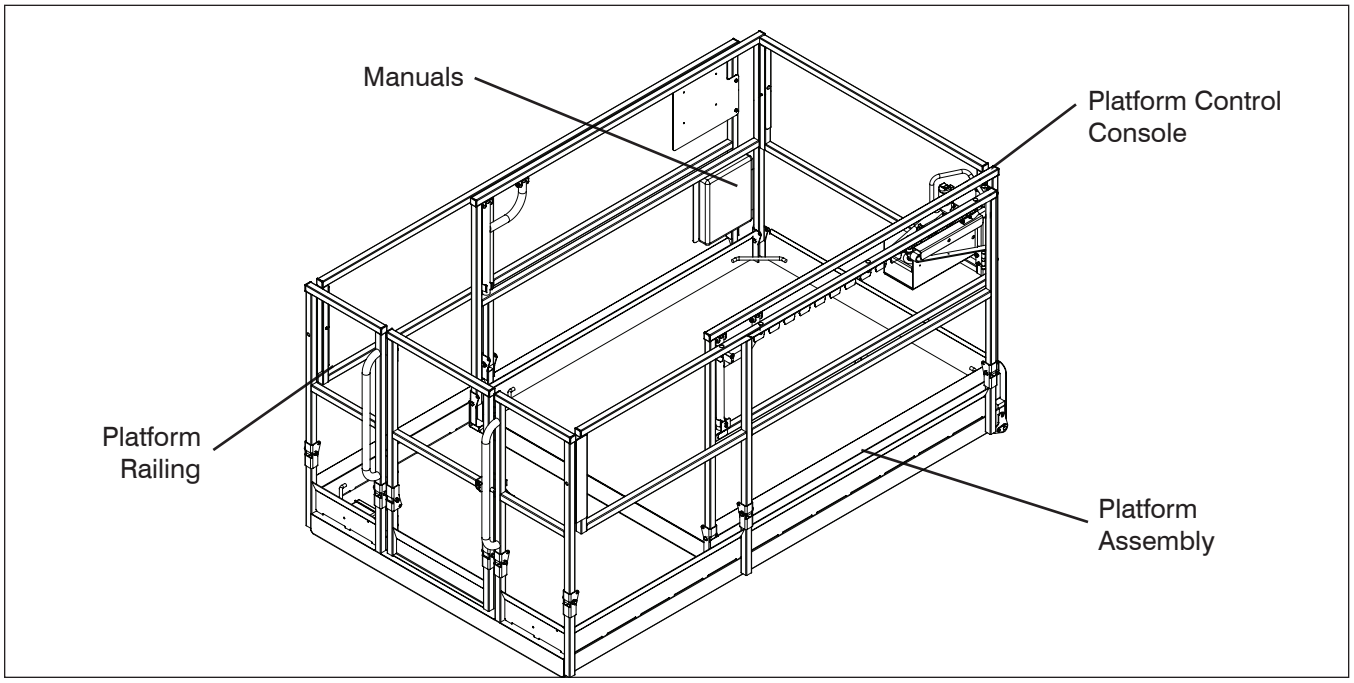
DANGER

Engine fuels are combustible. Inspect the aerial platform in an open, well-ventilated area away from heaters, sparks and flames. Always have an approved fire extinguisher within easy reach.

Perform a visual inspection around the following areas:

- fuel tank
- hoses and fittings

- **Main Manifold**
  - Ensure all fittings and hoses are properly tightened and there is no evidence of hydraulic leakage.
  - Ensure there are no loose wires or missing fasteners.
- **Gear Type Flow Divider**
  - Ensure there are no loose or missing parts and there is no visible damage.



2.8-7Platform Assembly

WARNING

Ensure that you maintain three points of contact to mount/dismount platform.

1. Use the ladder of aerial platform to platform.
2. Close the gate.
   - Ensure there are no loose or missing parts and there is no visible damage.
   - Ensure all fasteners are securely in place.
   - Ensure all railings are properly positioned and secured.
   - Ensure gate is in good working order.

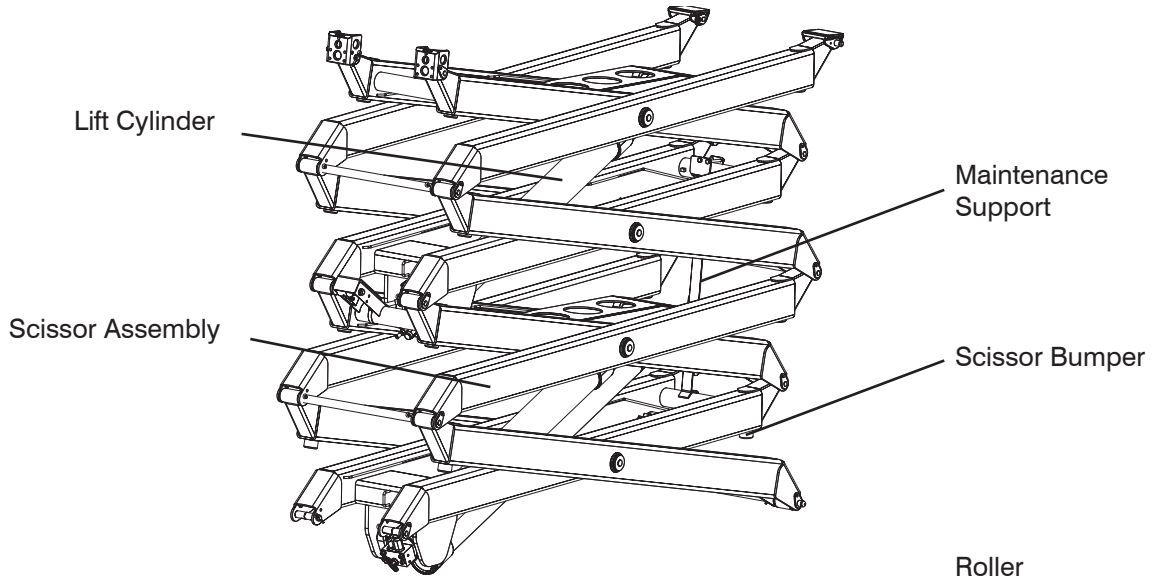
- **Lanyard Attachment Anchors**
  - Ensure attachment rings are secure and no visible damage.
- **AC Outlet on Platform**
  - Ensure outlet has no visible damage and free from dirt or obstructions.
- **Manuals**

  Ensure a copy of operating manual, manual of responsibilities and ANSI/CSA certificate are enclosed in manual storage box.
  - Check to be sure manual storage box is present and in good condition.
  - Ensure manuals are legible and in good condition.
  - Always return manuals to the manual storage box after use.
- **Platform Control Console**
  - Ensure all switches and controller are returned to neutral and are properly secured.
  - Ensure there are no loose or missing parts and there is no visible damage.

WARNING

Ensure that you maintain three points of contact to mount/dismount platform.

3. Use the ladder to dismount from platform.



2.8-8 Lifting Mechanism

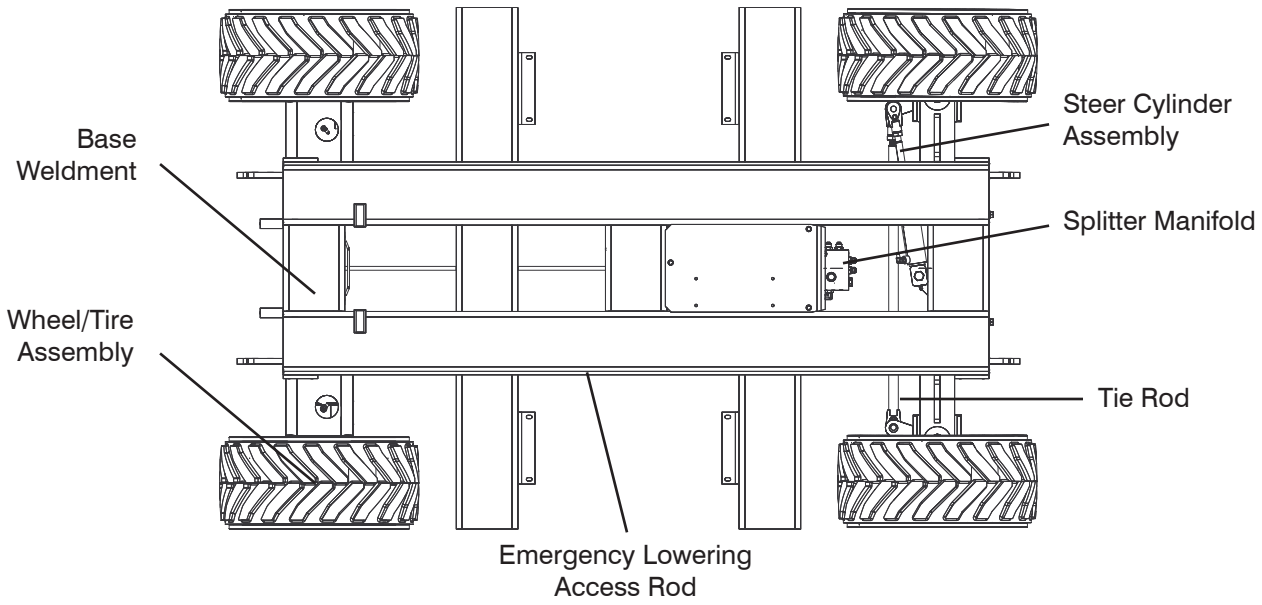
1. Raise the platform until there is adequate clearance to swing down the maintenance support.

- **Maintenance Support**
  - Ensure maintenance support is properly secured and shows no visible damage.
- **Scissor Assembly**
  - Ensure scissor assembly shows no visible damage and no signs of deformation in weldments.
  - Ensure all pins are properly secured.
  - Ensure cables and wires are properly routed and shows no signs of wear and/or physical damage.
- **Scissor Bumpers**
  - Ensure bumpers are secure and shows no sign of visible damage.
- **Rollers**
  - Ensure rollers are secure and there is no visible damage.
  - Ensure rollers' path of travel are free from dirt and obstructions.
- **Lift Cylinder(s)**
  - Ensure each lift cylinder is properly secured, there are no loose or missing parts and there is no evidence of damage.
  - Ensure all fittings and hoses are properly tightened and there is no evidence of hydraulic leakage.

2. Raise the platform until there is adequate clearance to swing up the maintenance support into storage bracket.

3. Fully lower the platform.

Overhead View



2.8-9Base

- **Base Weldment**
  - Ensure there are no visible cracks in welds or structure and there are no signs of deformation.
- **Wheel/Tire Assembly**
  The aerial platform is either equipped with air tires or foam-filled tires. Tire and/or wheel failure could result in an aerial platform tipover. Component damage may also result if problems are not discovered and repaired in a timely fashion.

WARNING

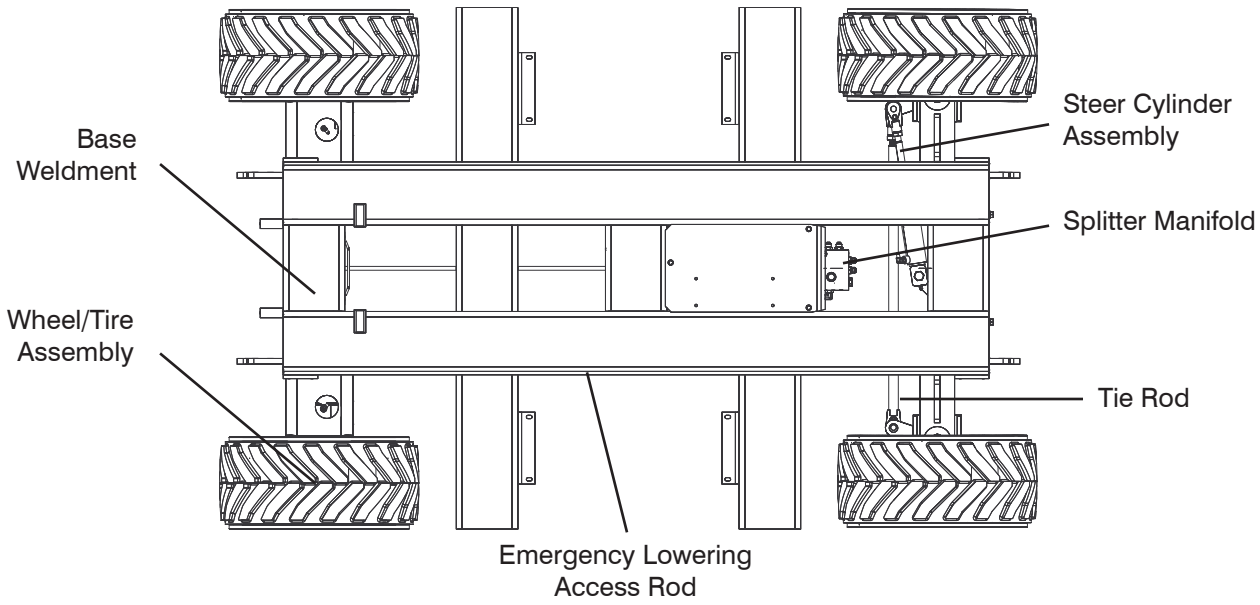
Air filled tires are not permitted on some models. Refer to Table 2.1.

WARNING

An over-inflated tire can explode and may cause death or serious injury.

- Check all tire treads and sidewalls for cuts, cracks, punctures and unusual wear.
- Check each wheel for damage and cracked welds.
- Check each lug nut for proper torque to ensure none are loose.
- Check wheel motor assembly for loose or missing parts and signs of visible damage.
- Ensure wheels are aligned and true vertically and horizontally.

Overhead View

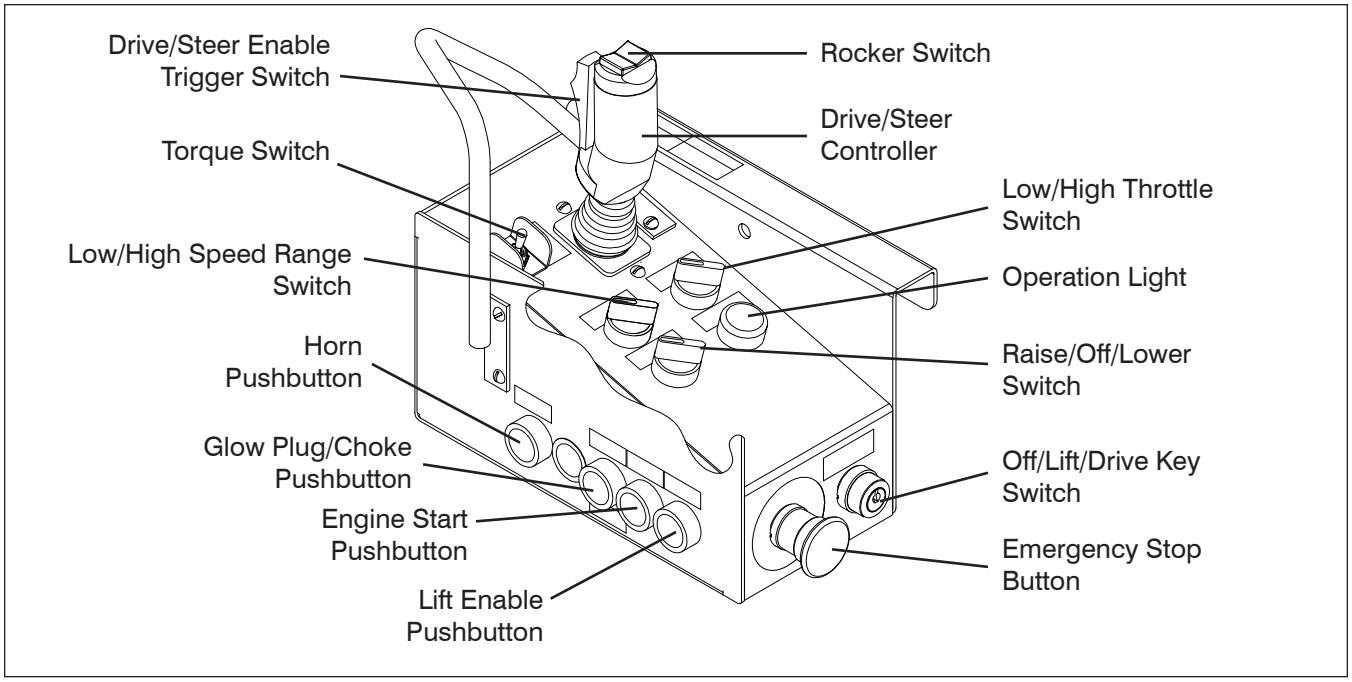


To safeguard maximum stability, achieve optimum aerial platform handling and minimize tire wear, it is essential to maintain proper pressure in all air-filled tires.

- Check each tire with an air pressure gauge and add air as needed.

Refer to Table 2.1 for wheel/tire specifications.

- **Steer Cylinder Assembly**
  - Ensure steer cylinder assembly is properly secured, there are no loose or missing parts, all fittings and hoses are properly tightened and there is no evidence of hydraulic leakage.
- **Splitter Manifold**
  - Ensure all fittings and hoses are properly tightened and there is no evidence of hydraulic leakage.
- **Tie Rod**
  - Ensure there are no loose or missing parts, tie rod end studs are locked and there is no visible damage.
- **Emergency Lowering Access Rod**
  - Ensure rod is properly secured and there is no visible damage.
- **Ladder**
  - Ensure there are no loose or missing parts and there is no visible damage.
- **Outriggers**
  - Ensure there are no loose or missing parts and there is no visible damage.



1.2 Function Tests

Function tests are designed to discover any malfunctions before aerial platform is put into service. The operator must understand and follow step-by-step instructions to test all aerial platform functions.

WARNING

Never use a malfunctioning aerial platform. If malfunctions are discovered, aerial platform must be tagged and placed out of service. Repairs to aerial platform may only be made by a qualified service technician.

After repairs are completed, operator must perform a pre-operation inspection and a series of function tests again before putting aerial platform into service.

Prior to performing function tests, be sure to read and understand Section 2.10 - Start Operation of the operating manual.

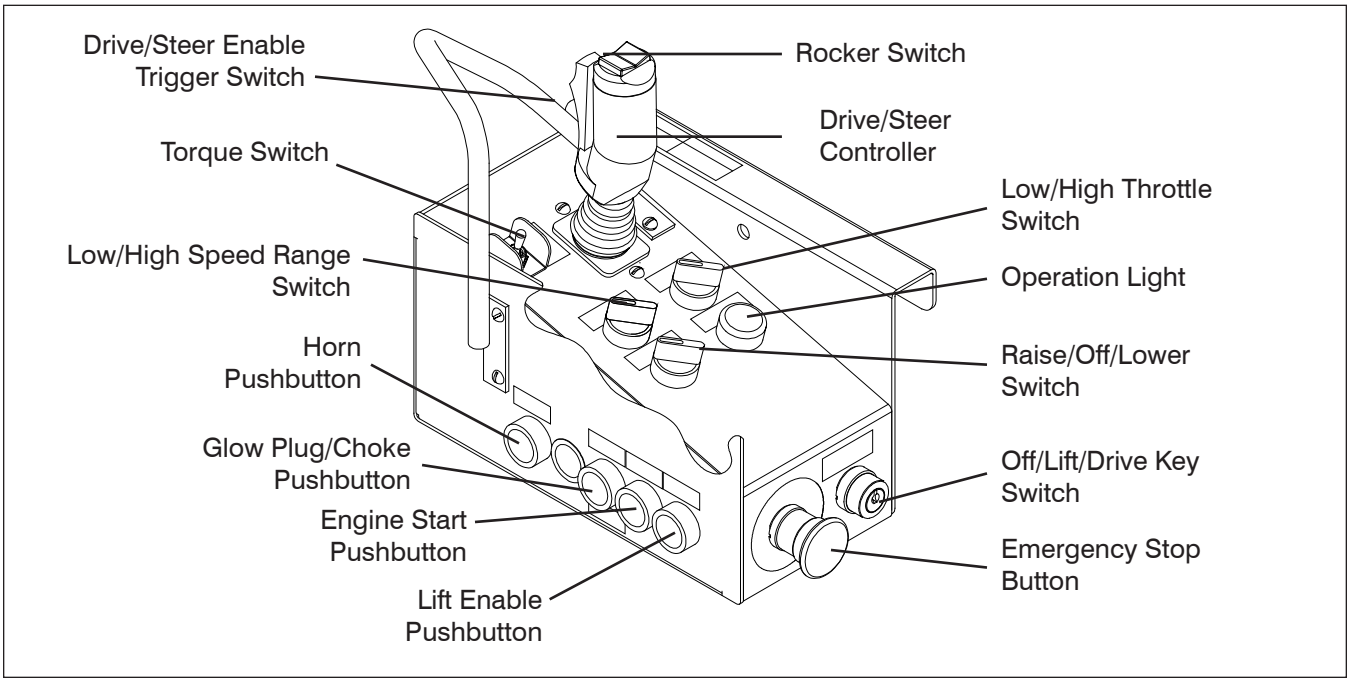
1.2-1 Platform Control Console

1. Turn main power disconnect switch to "|" on position.
2. On base control console, pull out "○" emergency stop button.
3. For CE, select off/platform/base key switch to "" platform position.
4. On engine control console, select off/on/start switch to "|" on position.
5. For ANSI/CSA with dual fuel engine, select fuel supply by moving fuel switch to either "" gasoline or "" liquid propane gas position.

WARNING

Ensure that you maintain three points of contact when using the ladder to mount/ dismount platform.

6. Use the ladder of aerial platform to access platform.
7. Close the gate.
8. On platform control console, insert key into off/lift/ drive key switch and select "↑ ↓" lift position.
9. Pull out "○" emergency stop button. A beeping sound should be audible and light should come on.



WARNING

If beeping sound is not audible and light does not come on, aerial platform must be tagged and placed out of service.

8. Select low/high throttle switch to "" low throttle position.

CAUTION

Do not start the engine in the high throttle position.

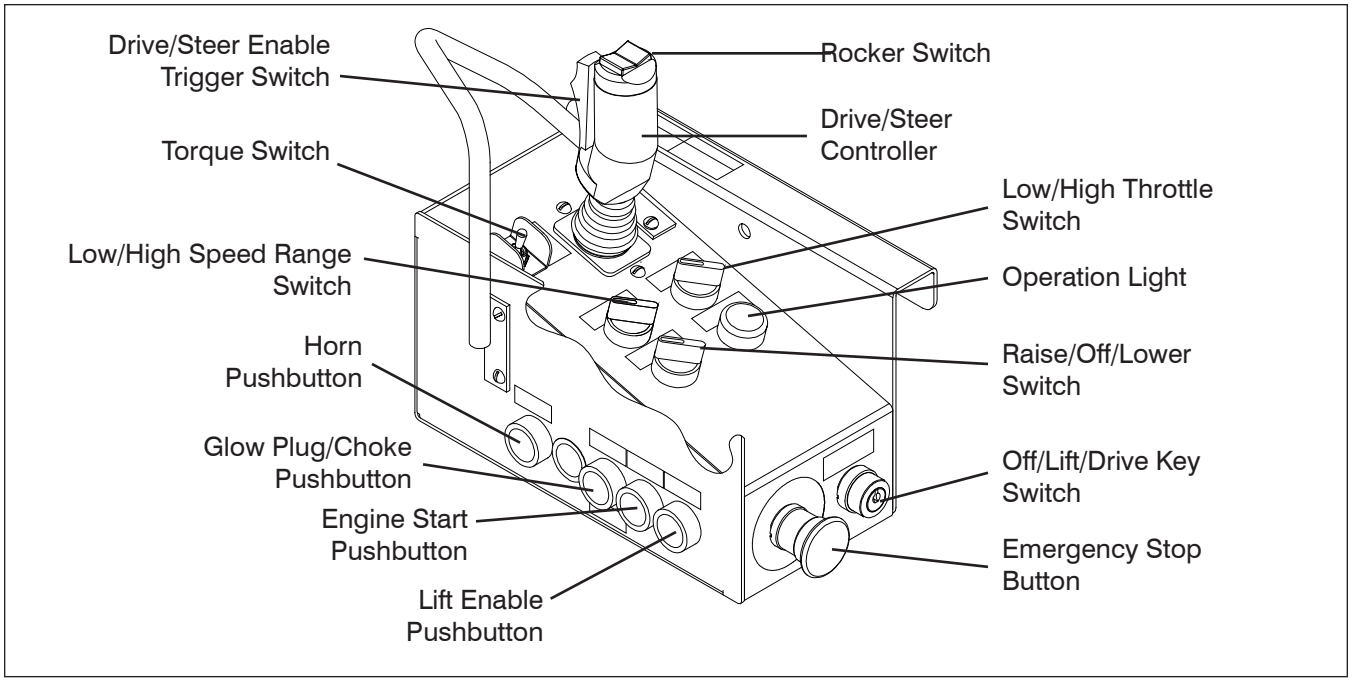
9. To start the engine:

   - If (ANSI/CSA) dual fuel engine is cold, depress and hold "" choke pushbutton (if equipped) with engine "" start pushbutton to start the engine.
   - If diesel engine is cold, select and hold "" glow plug pushbutton for 15 to 20 seconds or until indicator light goes off. Depress and hold "" engine start pushbutton to start the engine.
   - If engine is not cold, depress and hold "" engine start pushbutton to start the engine.
   - **Test Emergency Stop**

     1. Push in "" emergency stop button.
        Result: Engine should shut down and aerial platform functions should not operate.

   - **Test Lift Enable**

     1. Pull out "" emergency stop button.
     2. Restart the engine.
     3. Select and hold raise/off/lower switch to "" raise position without pressing lift "" enable pushbutton.
        Result: Platform should not rise.



- **Test Platform Raising/Lowering**

WARNING

Be aware of overhead obstructions or other possible hazards around the aerial platform when lifting.

1. Press and hold lift "" enable pushbutton, then select and hold raise/off/lower switch to "" raise position and raise the platform to an approximate height of 1 ft. (30.5 cm). Release switch to stop.
   Result: Platform should rise.
2. Press and hold lift "" enable pushbutton, then select and hold raise/off/lower switch to "" lower position and lower the platform fully. Release switch to stop.
   Result: Platform should lower.

- **Test Enable Trigger Switch**

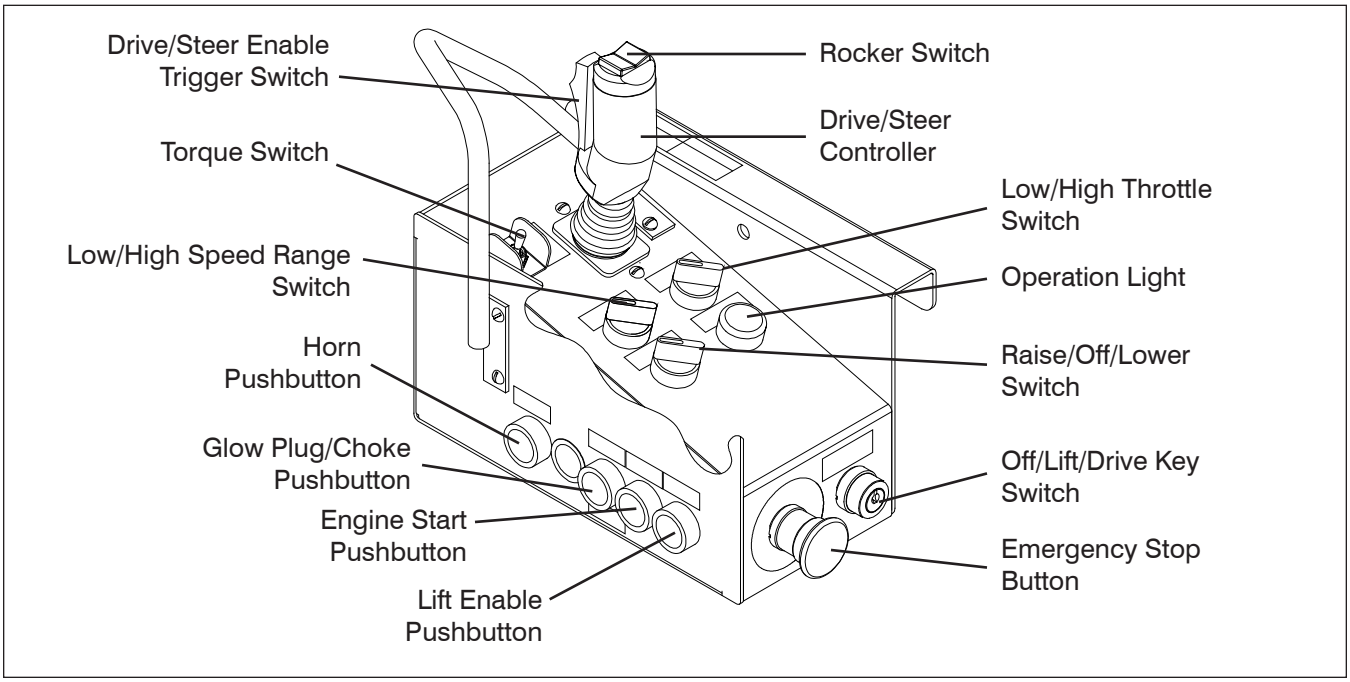
1. Ensure outriggers are fully retracted.
2. Ensure path of intended motion is clear.
3. Select off/lift/drive key switch to "" drive position.
4. Without activating "" enable trigger switch, attempt to drive and steer the aerial platform.
   Result: Drive and steer functions should not operate.

- **Test Steering**

1. Activate and hold enable trigger switch, and then press rocker switch on top of controller to "" left and "" right.
   Result: Steer wheels should turn left and right.

- **Test Horn**

1. Push "" horn pushbutton.
   Result: Horn should sound.



- **Test Driving**

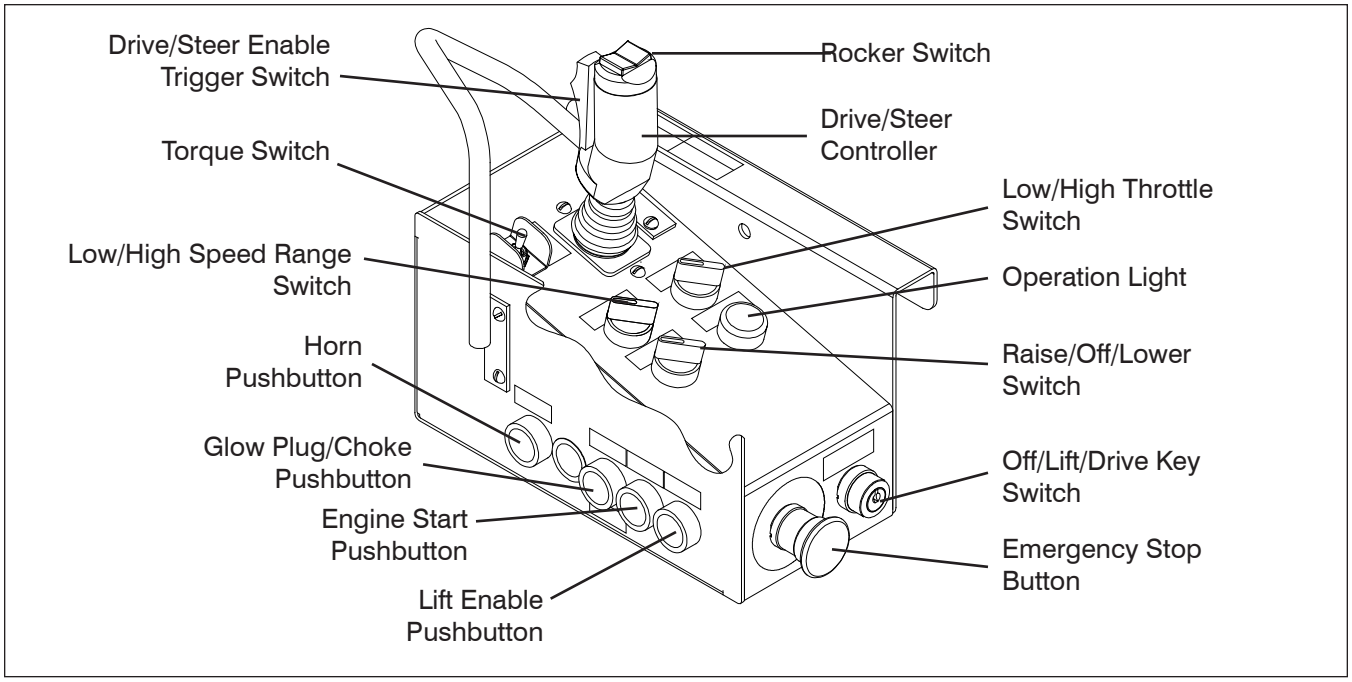
1. Ensure path of intended motion is clear.
2. Activate and hold " " enable trigger switch.
3. Slowly move controller fully " " forward, and then return handle to center position.
   Result: Aerial platform should move in forward direction, and then come to a stop.
4. Slowly move controller fully " " backward, and then return handle to center position.
   Result: Aerial platform should move in reverse direction, and then come to a stop.

- **Test Brake**

WARNING

Brake will engage instantly when controller handle is released, causing aerial platform to stop immediately.

1. Ensure path of intended motion is clear.
2. Activate and hold " " enable trigger switch.
3. Drive aerial platform " " forward. Test brake by releasing controller handle.
   Result: Aerial platform should come to a stop.
4. Drive aerial platform " " forward. Test brake again by releasing " " enable trigger switch only.
   Result: Aerial platform should come to an instant and abrupt stop.



- **Test Speed Limit**

WARNING

Be aware of overhead obstructions or other possible hazards around the aerial platform when lifting.

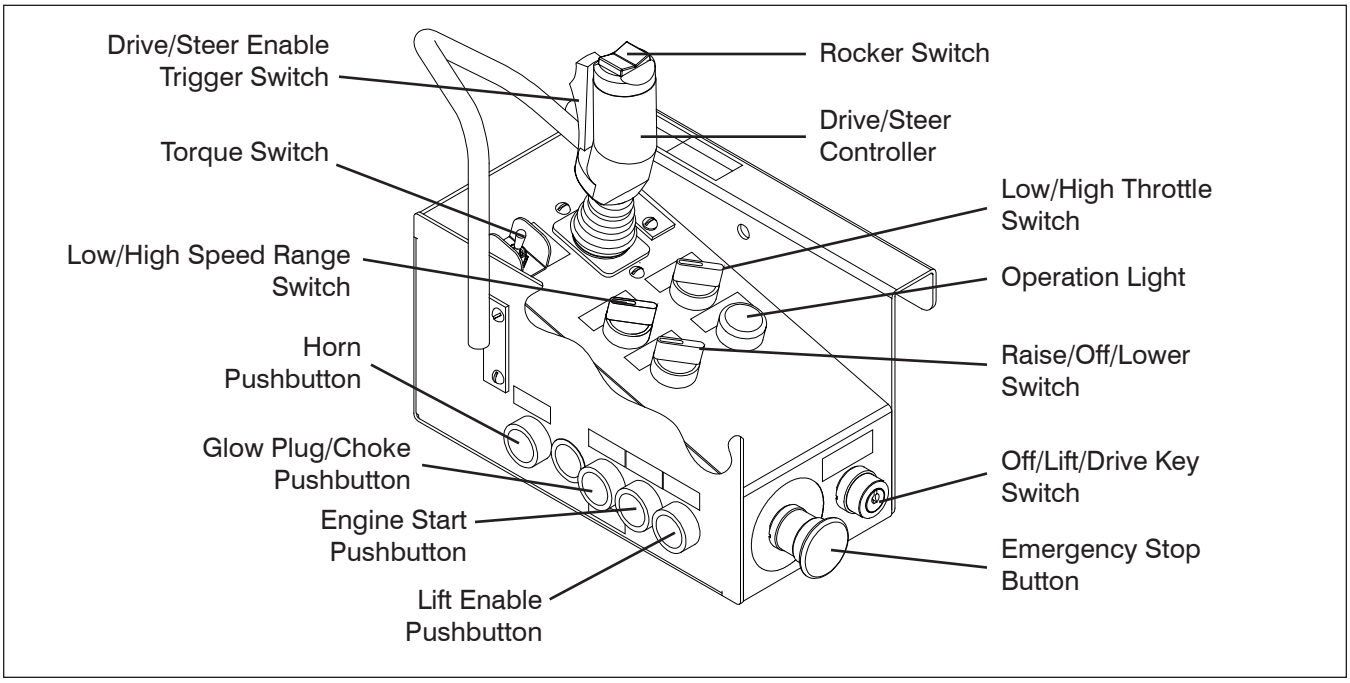
1. Ensure path of intended motion is clear.
2. Select off/lift/drive key switch to "↑↓" lift position.
3. Raise the platform to an approximate height of 13 ft. (4 m).
4. Select off/lift/drive key switch to "" drive position and attempt to drive forward or reverse.
   Result: Aerial platform should move slower than when it was in stowed position.

- **Test Lowering Warning - CE**

1. Select off/lift/drive key switch to "↑↓" lift position.
2. Fully lower the platform.
   Result: Platform should stop lowering at an approximate height of 2.5 meters and an alarm should sound.
3. Release platform raise/off/lower switch, ensure area around scissor is clear, then continue lowering the platform.
4. Lower the platform fully.

- **Test Powerdeck Enable (If Equipped)**

1. Select and hold extend/retract switch to the "" extend position without selecting "" enable switch.
   Result: Platform should not extend.



- **Test Extension Platform(s) (If Equipped)**

  1. Extend each extension platform to about 1 ft. (30.5 cm).
     Result: Each extension platform should extend.

  2. Retract each extension platform fully.
     Result: Each extension platform should fully retract.

- **Test Tilt Sensor (If Equipped)**

WARNING

Be aware of overhead obstructions or other possible hazards around the aerial platform when lifting.

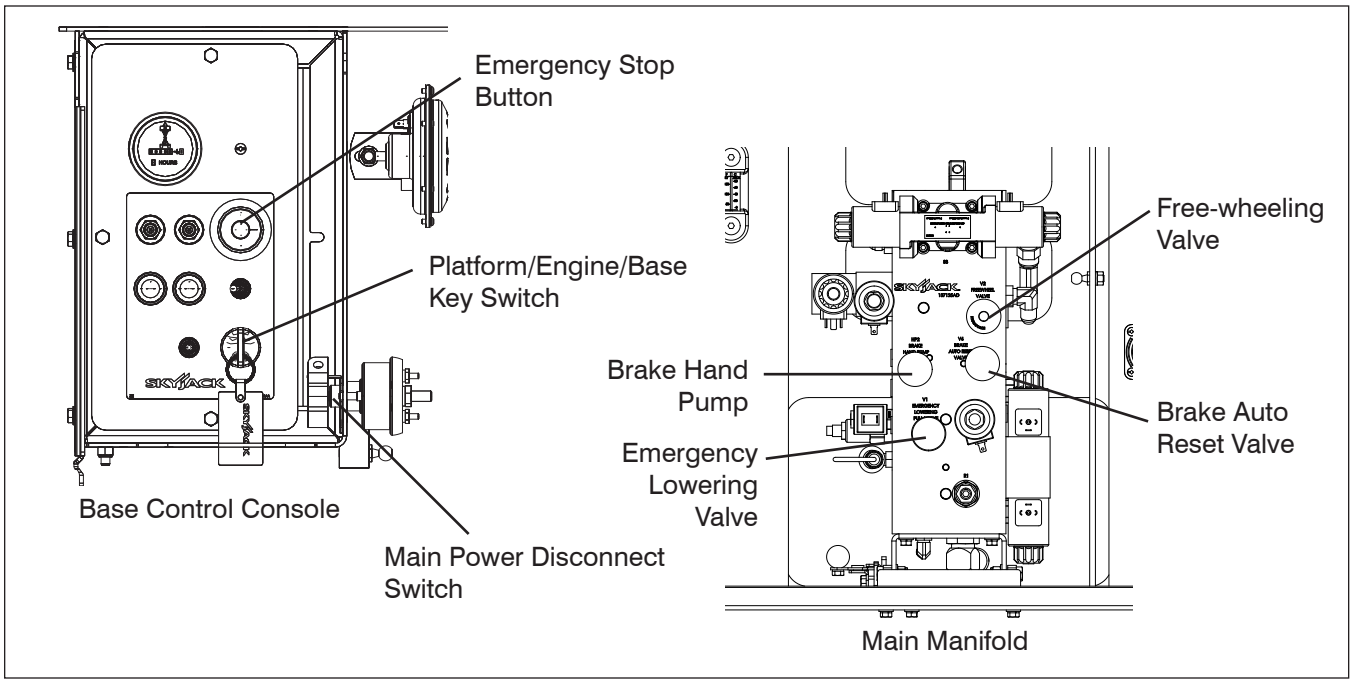
WARNING

Ensure that there are no personnel or obstructions in the path of travel, including blind spots.

1. Move the aerial platform on to a slope not greater than 4.5°.

2. Use the ladder to dismount from platform.

3. On base control console, slowly raise the platform.
   Result: When platform reaches an appropriate height, a warning signal should sound and platform stop raising as lift and drive controls should be disabled.



1.2-2 Base Control Console

2.9-1Test Main Power Disconnect Switch

1. In engine compartment, turn power disconnect switch to "◯" off position.
   Result: Aerial platform functions should not operate.

2.9-2Base Control Console

WARNING

Ensure that you maintain three points of contact when using the ladder to mount/ dismount platform.

1. Use the ladder of aerial platform to access platform.
2. Close the gate.
3. On platform control console, pull out "◯" emergency stop button.
4. Select low/high throttle switch to "◯" low throttle position.
5. Use the ladder to dismount from platform.
6. Turn main power disconnect switch to "|"on position.

- **Test Platform/Engine/Base Key Switch**

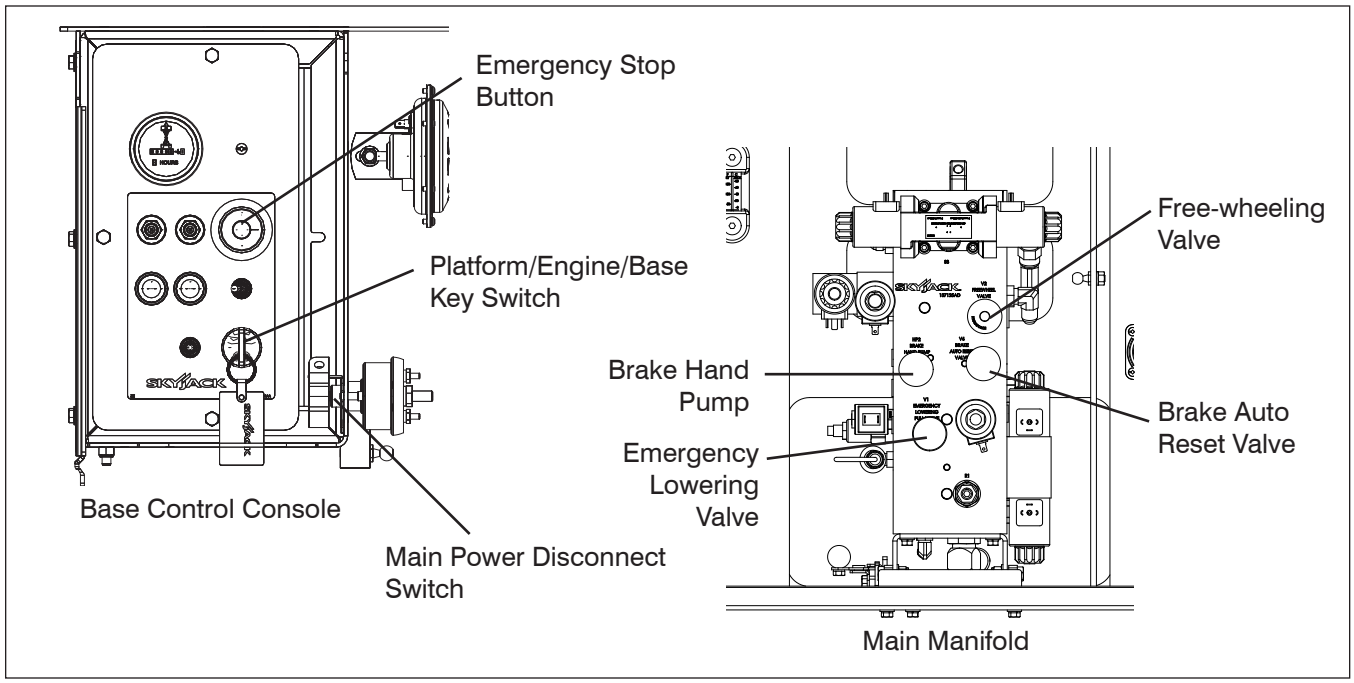
WARNING

Be aware of overhead obstructions or other possible hazards around the aerial platform when lifting.

1. Pull out base "◯" emergency stop button.
2. Insert key into platform/engine/base key switch, select "◯" engine position and attempt to start engine.
   Result: Engine should not start.
3. With key inserted into platform/engine/ base key switch, select "◯" base position and attempt to start engine.
   Result: Engine should start.

- **Test Emergency Stop**

1. Push in base "◯" emergency stop button.
   Result: Engine should shut down and aerial platform functions should not operate.
2. Pull out base "◯" emergency stop button and restart engine.



- **Test Platform Raise/Lower Switch**

  1. Select platform/engine/base key switch to "" base position and raise or lower the platform with platform "" raise or "" lower switch.
     Result: Platform raising and lowering functions should operate.

- **Test Emergency Lowering**

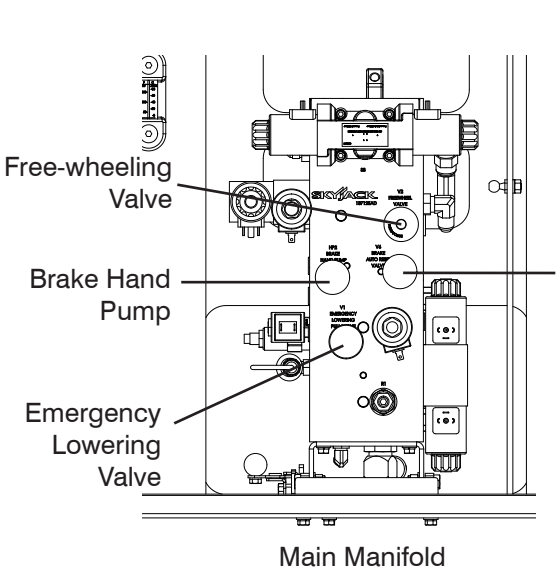
  1. Raise the platform.
  2. Locate holding valve manual override knob at the base of each lift cylinder. Depress and turn counterclockwise. If necessary, use access rod that is located on the base of the aerial platform.
  3. On hydraulic/fuel compartment, pull out and hold emergency lowering valve to fully lower the platform.
     Result: The platform should lower.
  4. To restore normal operation, depress and turn holding valve manual override knobs clockwise.

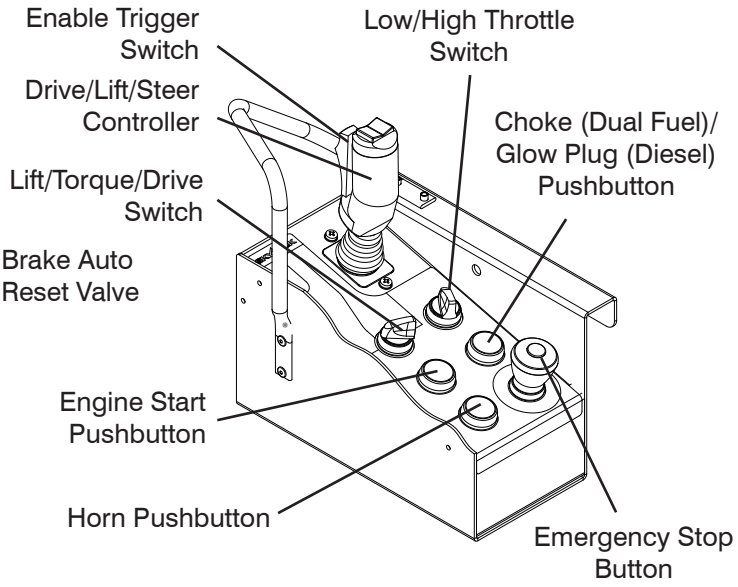
- **Test Free-wheeling**

  1. Ensure path of intended motion is clear.
  2. Release the brake manually.
  3. Turn free-wheeling valve knob counterclockwise to a fully opened position and attempt to push/pull the aerial platform.
     Result: Aerial platform should move.
  4. Turn free-wheeling valve knob clockwise to a fully closed position for normal operation.
  5. Reengage the brake.

2.9-3 Platform Control Console

1. Ensure base "" emergency stop button is pulled out.
2. Ensure main power disconnect switch is in "" on position.
3. Select platform/engine/base key switch to "" platform position and remove key.





WARNING

Ensure that you maintain three points of contact when using the ladder to mount/ dismount platform.

3. Use the ladder of aerial platform to access platform.
4. Close the gate.
5. On platform control console, pull out "" emergency stop button.

- **Test Emergency Stop**

  1. Ensure engine is running.
  2. Push in "" emergency stop button.
     Result: Engine should shut down and aerial platform functions should not operate.

- **Test Enable Trigger Switch**

  1. Ensure engine is running.
  2. Without activating "" enable trigger switch, attempt to activate any platform function.
     Result: All platform functions should not operate.

- **Test Platform Raising/Lowering**

WARNING

Be aware of overhead obstructions or other possible hazards around the aerial platform when lifting.

  1. Select lift/torque/drive switch to "" lift position.
  2. Activate and hold "" enable trigger switch.
  3. Push or pull controller handle until desired height is reached.
     Result: Platform raising and lowering functions should operate.

- **Test Steering**

  1. Ensure engine is running.
  2. Press rocker switch on top of controller to "" left and "" right.
     Result: Steer wheels should turn left and right.

Section 2
MAINTENANCE TABLES AND DIAGRAMS

Table of Contents

Tables

2.1a Specifications and Features - ANSI/CSA 2
2.1b Specifications and Features - CE 3
2.1c Specifications and Features - AS 4
2.2a Floor Loading Pressure - ANSI/CSA 6
2.2b Floor Loading Pressure - CE 6
2.2c Floor Loading Pressure - AS 7
2.3a Maximum Platform Capacities(Evenly Distributed) - ANSI/CSA 8
2.3b Maximum Platform Capacities(Evenly Distributed) - CE 8
2.3c Maximum Platform Capacities(Evenly Distributed) - AS 9
2.4 Rough Terrain Scissor Fluids 10
2.5 Torque Specifications 12

2

Table 2.1a Specifications and Features - ANSI/CSA

Model		Compact RT's			
		6826		6832	
Weight*	No Outriggers	6400 lb.	2903 kg	7660 lb.	3475 kg
	With Outriggers	7500 lb.	3402 kg	8060 lb.	3656 kg
Width		68"	1.73 m	68"	1.73 m
Length	No Outriggers	106.6"	2.71 m	106.6"	2.71 m
	With Outriggers	131.4"	3.34 m	131.4"	3.34 m
Platform Size		56" x 99"	1.4 m x 2.5 m	56" x 99"	1.4 m x 2.5 m
Height	Working	32 ft.	9.8 m	38 ft.	11.7 m
	Platform Elevated	26 ft.	8 m	32 ft.	9.8 m
	Platform Lowered	7.8 ft.	2.37 m	8.25 ft.	2.52 m
	Drive	26 ft.	7.95 m	32 ft.	9.8 m
Speed	Normal Drive	4 mph	6.3 km/h	4 mph	6.3 km/h
	Elevated Drive	0.39 mph	0.63 km/h	0.39 mph	0.63 km/h
	Lift (Rated Load)	36 sec		39 sec	
	Lower (Rated Load)	36 sec		36 sec	
Engine (RPM)	Kubota Diesel	3500 (High Throttle) / 2050 (Low Throttle)			
	Kubota Dual Fuel	3500 (High Throttle) / 2050 (Low Throttle)			
Tires	Foam-filled	OTR Outrigger - 26 x 12			
	Air-filled	N/A			
Sound Pressure		96 dB(A)			
Gradeability (Torque Equivalent To)		50%		40%	

60440AG-ANSI

* Weights are approximate; refer to serial nameplate for specific weight.

Table 2.1b Specifications and Features - CE

Model		Compact RT's			
		6826		6832	
Weight*	No Outriggers	2903 kg	6400 lb.	3475 kg	7661 lb.
	With Outriggers	3305 kg	7286 lb.	3655 kg	8058 lb.
Width		1.73 m	68.1 in.	1.73 m	68.1 in.
Length	No Outriggers	2.7 m	106.3 in.	2.7 m	106.3 in.
	With Outriggers	3.34 m	131.5 in.	3.34 m	131.5 in.
Platform Size		1.4 m x 2.5 m	55 in. x 98 in.	1.4 m x 2.5 m	55 in. x 98 in.
Height	Working	9.8 m	32 ft.	11.7 m	38 ft.
	Platform Elevated	7.9 m	25.9 ft.	9.7 m	31.8 ft.
	Platform Lowered	2.37 m	7.8 ft.	2.51 m	8.2 ft.
	Drive	7.9 m	25.9 ft.	9.7 m	31.8 ft.
Speed	Normal Drive	6.3 km/h	4 mph	6.3 km/h	4 mph
	Elevated Drive	0.63 km/h	0.39 mph	0.63 km/h	0.39 mph
	Lift (Rated Load)	36 sec		39 sec	
	Lower (Rated Load)	36 sec		36 sec	
Engine (RPM)	Kubota Diesel	3500 (High Throttle) / 2050 (Low Throttle)			
	Kubota Dual Fuel	3500 (High Throttle) / 2050 (Low Throttle)			
Tires	Foam-filled	OTR Outrigger - 26 x 12D			
	Air-filled	N/A			
Sound Pressure		96 dB(A)			
Gradeability (Torque Equivalent To)		50%		40%	

60440AH-CE

* Weights are approximate; refer to serial nameplate for specific weight.

Table 2.1c Specifications and Features - AS

Model		Compact RT's	
		6826	6832
Weight*	No Outriggers	2900 kg	3475 kg
	With Outriggers	3305 kg	3655 kg
Width		1.73 m	1.73 m
Length	No Outriggers	2.71 m	2.71 m
	With Outriggers	3.34 m	3.34 m
Platform Size		1.4 m x 2.5 m	1.4 m x 2.5 m
Height	Working	9.8 m	11.6 m
	Platform Elevated	8.0 m	9.8 m
	Platform Lowered	2.37 m	2.51 m
	Drive	8.0 m	9.8 m
Speed	Normal Drive	6.3 km/h	6.3 km/h
	Elevated Drive	0.63 km/h	0.63 km/h
	Lift (Rated Load)	36 sec	39 sec
	Lower (Rated Load)	36 sec	36 sec
Engine (RPM)	Kubota Diesel	3500 (High Throttle) / 2050 (Low Throttle)	
	Kubota Dual Fuel	3500 (High Throttle) / 2050 (Low Throttle)	
Tires	Foam-filled	OTR Outrigger - 26 x 12	
	Air-filled	N/A	
Sound Pressure		96 dB(A)	
Gradeability (Torque Equivalent To)		50%	40%

60440AD-AS

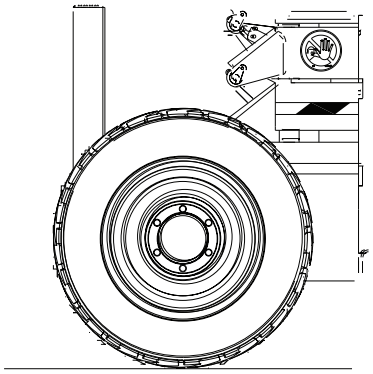
* Weights are approximate; refer to serial nameplate for specific weight.

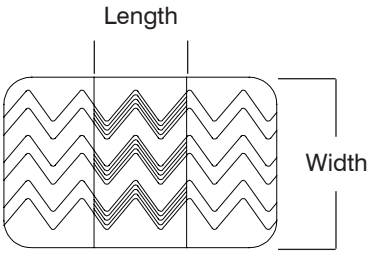
Floor Loading Pressure

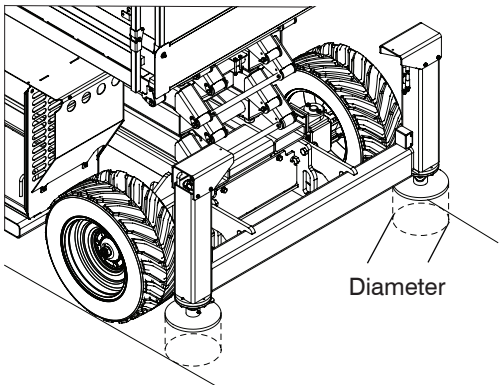
Locally Concentrated Pressure (LCP):

Foot Print Area = Length x Width
$= \pi r^2$

$$LCP = \frac{\text{Weight of Aerial Platform + Capacity}}{\text{Foot Print Area x 4 (Tires)}}$$



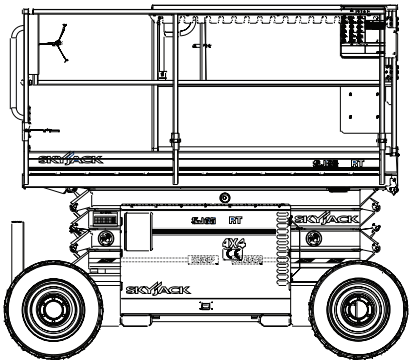


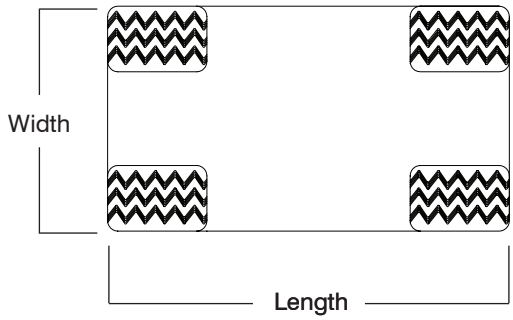


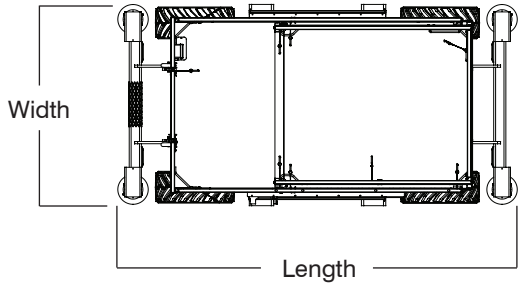
Overall Uniform Pressure (OUP):

Base Area = Length x Width

$$OUP = \frac{\text{Weight of Aerial Platform + Capacity}}{\text{Base Area}}$$







WARNING

Intermixing tires of different types or using tires of types other than those originally supplied with this equipment can adversely affect stability. Therefore, replace tires only with the exact original Skyjack-approved type. Failure to operate with matched approved tires in good condition may result in death or serious injury.

Table 2.2a Floor Loading Pressure - ANSI/CSA

MODEL		Total Aerial Platform Weight		Total Aerial Platform Load					
				Wheel		LCP**		OUP**	
		lb.	kg	lb.	kg	psi	kPa	psf	kg/m^2
6826	min*	6400	2903	2560	1161	157.4	1085	206	1007
	max*	8730	3960	3492	1584	175.41	1209	281	1373
6832	min*	7661	3475	3064	1390	165.59	1142	247	1205
	max*	9235	4189	3605	1635	181.36	1250	297	1452

60442AE-ANSI

* **min -** Total aerial platform weight with no options
max - aerial platform weight + all options + full capacity

** **LCP – Locally Concentrated Pressure** is a measure of how hard the aerial platform presses on the areas in direct contact with the floor. The floor covering (tile, carpet, etc.) must be able to withstand more than the indicated values above.

OUP – Overall Uniform Pressure is a measure of the average load the aerial platform imparts on the whole surface directly underneath it. The structure of the operating surface (beams, etc.) must be able to withstand more than the indicated values above.

NOTE:
The **LCP** or **OUP** that an individual surface can withstand varies from structure to structure and is generally determined by the engineer or architect for that particular structure.

Table 2.2b Floor Loading Pressure - CE

MODEL		Total Machine Weight		Total Machine Load					
				Wheel		LCP**		OUP**	
		kg	lb.	kg	lb.	kPa	psi	kg/m^2	psf
6826	min*	2903	6400	1161	2560	1085	157.4	1007	206
	max*	3960	8730	1584	3492	1209	175.41	1373	281
6832	min*	3475	7661	1390	3064	1142	165.59	1205	247
	max*	4189	9235	1635	3605	1250	181.36	1452	297

60442AE-CE

* **min** - Total machine weight with no options
max - Machine weight + all options + full capacity

** **LCP – Locally Concentrated Pressure** is a measure of how hard the machine presses on the areas in direct contact with the floor. The floor covering (tile, carpet, etc.) must be able to withstand more than the indicated values above.

OUP – Overall Uniform Pressure is a measure of the average load the machine imparts on the whole surface directly underneath it. The structure of the operating surface (beams, etc.) must be able to withstand more than the indicated values above.

NOTE:
The **LCP** or **OUP** that an individual surface can withstand varies from structure to structure and is generally determined by the engineer or architect for that particular structure.

Table 2.2c Floor Loading Pressure - AS

MODEL		Total		Extension	
		Capacity	Number of Occupants	Capacity	Number of Occupants
6826	One Extension Platform	567 kg	4	136 kg	1
6832	One Extension Platform	454 kg	4	136 kg	1

60441AC-AS

NOTE:

Occupants and materials are not to exceed rated load.
Refer to capacity label for additional information and for models equipped with options.

Table 2.3a Maximum Platform Capacities (Evenly Distributed) - ANSI/CSA

MODEL		Total Machine Weight			Extension		
		Capacity		Number of Occupants	Capacity		Number of Occupants
6826	One Extension Platform	1250 lb.	567 kg	4	300 lb.	136 kg	1
6832	One Extension Platform	1000 lb.	453.6 kg	4	300 lb.	136 kg	1

60441AC-ANSI

NOTE:
Occupants and materials are not to exceed rated load.
Refer to capacity label for additional information and for models equipped with options.

Table 2.3b Maximum Platform Capacities (Evenly Distributed) - CE

MODEL		Total		Extension	
		Capacity	Number of Occupants	Capacity	Number of Occupants
6826	**One Extension Platform**	567 kg	4	136 kg	1
6832	**One Extension Platform**	454 kg	2	136 kg	1

60441AB-CE

NOTE: Occupants and materials are not to exceed rated load.
Refer to capacity label for additional information and for models equipped with options.

BEAUFORT SCALE	Wind Speed				Ground Conditions
	m/s	km/h	ft/s	mph	
3	3.4 – 5.4	12.5 – 19.4	11.5 – 17.75	5 – 12.0	Papers and thin branches move, flags wave
4	5.4 – 8.0	19.4 – 28.8	17.75 – 26.25	12.0 – 18	Dust is raised, paper whirls up, and small branches sway.
5	8.0 – 10.8	28.8 – 38.9	26.25 – 35.5	18 – 24.25	Shrubs with leaves start swaying. Wave crests are apparent in ponds or swamps.
6	10.8 – 13.9	38.9 – 50.0	35.5 – 45.5	24.5 – 31	Tree branches move. Power lines whistle. It is difficult to open an umbrella.
7	13.9 – 17.2	50.0 – 61.9	45.5 – 65.5	31 – 38.5	Whole trees sway. It is difficult to walk against the wind.

60338AC

Table 2.3c Maximum Platform Capacities (Evenly Distributed) - AS

MODEL		Total		Extension	
		Capacity	Number of Occupants	Capacity	Number of Occupants
6826	One Extension Platform	567 kg	4	136 kg	1
6832	One Extension Platform	454 kg	4	136 kg	1

60441AC-AS

NOTE:

Occupants and materials are not to exceed rated load.
Refer to capacity label for additional information and for models equipped with options.

Table 2.4 Rough Terrain Scissor Fluids

AXLE OIL					
Axle Type		*Qty. (Liters)	*Qty. (Gallons)	Oil Type	Recommended Equivalent Oil
Cushman	Front	2.4	0.634	Gear Oil, 80W-90 GL5	-
Dana	Front / Rear				
Cushman	Rear	1	0.264	Gear Oil, ESI 80W-90	Chevron Gear Lubricant Delo ESI 80W-90, Caltex Gear Lubricant ESI 80W-90, Caltex RPM Borate EP 80W-90, Texaco Star Gear Lubricant 80W-90

*All fuel capacity quantities are in standard liter or US gallons (liquid).

**Use distilled water and 50/50 mix of anti-freeze/water.

CENTER DRIVE OIL				
Center Drive Type	*Qty. (Liters)	*Qty. (Gallons)	Oil Type	Recommended Equivalent Oil
Center Drive	1	0.26	Gear Oil, 80W-90 GL5	-

*All fuel capacity quantities are in standard liter or US gallons (liquid).

**Use distilled water and 50/50 mix of anti-freeze/water.

HYDRAULIC OIL			
Model	*Qty. (Liters)	*Qty. (Gallons)	Oil Type
SJRT-68XX	86.88	22.95	ATF Dexron III
SJRT-7127	80.48	21.26	
SJRT-7135			
SJRT-8243			
SJRT-8850			
SJRT-8831	75.71	20	
SJRT-8841			
SJRT-8831E			
SJRT-8841E			
SJRT-9241	67.38	17.8	
SJRT-9250			

*All fuel capacity quantities are in standard liter or US gallons (liquid).

**Use distilled water and 50/50 mix of anti-freeze/water.

Table 2.4 Rough Terrain Scissor Fluids (Continued)

ENGINE OIL				
Engine Type	*Qty. (Liters)	*Qty. (Gallons)	Oil Type, Viscosity	Recommended Equivalent Oil (Viscosity - API Service Designation)
Kubota D902	3.9	1.03	Engine Oil, SAE 10W-30	10W30 - API Service Designation CG-4, CF-4, CF, CD, SH.
Kubota D1105	5.1	1.35		
Kubota DF972	3.4	0.9		
Nissan A15	3.5	0.98		
GM 1.6				10W30 - API Service Designation SF/CC.

*All fuel capacity quantities are in standard liter or US gallons (liquid).

**Use distilled water and 50/50 mix of anti-freeze/water.

ENGINE COOLANT			
Component Type	*Qty. (Liters)	*Qty. (Gallons)	**Coolant Type
Kubota D902	3.1	0.82	Anti-freeze / Water
Kubota D1105			
Kubota DF972			
Nissan A15	11.4	3.01	
GM 1.6			Extended life anti-freeze / Water

*All fuel capacity quantities are in standard liter or US gallons (liquid).

**Use distilled water and 50/50 mix of anti-freeze/water.

ENGINE FUEL							
Model	Tank		Diesel		Gasoline / Liquid Propane		
	*Qty. (Liters)	*Qty. (Gallons)	Kubota D902	Kubtoa D1105	Kubota DF972	GM 1.6	Nissan A15
SJRT-68xx	86.88	22.95	✓	N/A	✓	N/A	
SJRT-7127	80.48	21.26	N/A	✓			
SJRT-7135							
SJRT-8243					N/A	✓	
SJRT-8850							
SJRT-8831	49.21	13					
SJRT-8841							
SJRT-9241	64.35	17					
SJRT-9250							

*All fuel capacity quantities are in standard liter or US gallons (liquid).

**Use distilled water and 50/50 mix of anti-freeze/water.

Table 2.5 Torque Specifications

Hydraulic drive motor castle nut			350 lbl/ft					
Directional valve mounting bolts			28-32 lbf.in				3.16 - 3.61 Nm	
Wheel mounting bolts			135-145 lbf.ft				183 – 196 Nm	
Center drive sprocket mounting bolts			110-115 lbf.ft (242 LOCTITE)				149 – 156 Nm	
Hydraulic drive motor mounting bolts			120 lbf.ft (242 LOCTITE)				162 Nm	
Positive battery post cable/fuse nut			90 lb-in				10.2 Nm	
Cartridge								
Torque	**Size**							
	08	38	58	10	12	16		
Lbf.ft (max)	20			25	35	50		
Lbf.in (max)	240			300	420	600		
Nm (max)	27.12			33.90	47.46	67.80		
Coils								
Torque	**Size**							
	All coils							
Lbf.ft (max)	4 to 5							
Lbf.in (max)	48 to 60							
Nm (max)	5.42 to 6.78							
SAE Plugs								
Torque	**Size**							
	2	4	5	6	8	10	12	16
Lbf.ft (max)	3	10	15		25		30	35
Lbf.in (max)	36	120	180		300		360	420
Nm (max)	4.07	13.56	20.34		33.90		40.68	47.46
Newton-meter = Nm			**Pound-force foot = lbf.ft**			**Pound-force inch = lbf.in**		

60022AD

Section 3
SYSTEM COMPONENT IDENTIFICATION AND SCHEMATICS

Table of Contents

Charts

3.1. Hydraulic Symbol Chart 3
3.2. Electrical Symbol Chart 4
3.3. Hydraulic Schematic Parts List 5

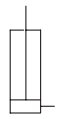
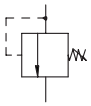
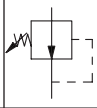
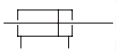
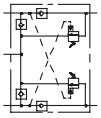
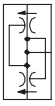
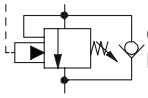
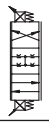
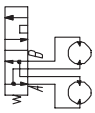
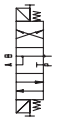
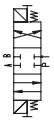
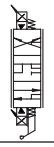
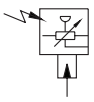
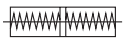
Parts List

3.4. Electrical Parts List 8
3.5. Hydraulic Schematic 13

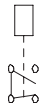
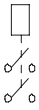
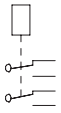
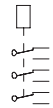
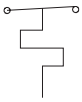
Diagrams and Schematics

3.6. Hydraulic Manifolds And Ports Identification 14
3.7. Control Box Diagram - With All Options 16
3.8. Outrigger/Hydraulic Generator Control Console Wiring 17
3.9. Scissor Arm Control Cable 18
3.10. Main Manifold Harness Wiring Diagram - ANSI/CSA 19
3.11. Main Manifold Harness Wiring Diagram - CE 20
3.12. Load Sensing Harnesses 21
3.13. Engine Wiring Diagram - Dual Fuel System (Kubota Engine) 22
3.14a. Engine Wiring Diagram - Diesel Fuel System (Kubota Engine) 23
3.14b. Engine Wiring Diagram - Diesel Fuel System (Kubota Engine) 24
3.15. Outrigger Optional Harness Diagram 25
3.16. Hydraulic Generator Electrical Panel Assembly 26
3.17. Electrical Panel Wiring Diagram - Terminal Block Details 27
3.18. Electrical Panel Wiring Diagram (ANSI/CSA) 29
3.19. Electrical Panel Wiring Diagram (CE) 30
3.20. Electrical Schematic - ANSI/CSA (No Option With Kubota Dual Fuel Engine) 31
3.21. Electrical Schematic - ANSI/CSA (All Option With Kubota Dual Fuel Engine) 32
3.22a. Electrical Schematic - ANSI/CSA (All Option With Kubota Diesel Engine) 33
3.22b. Electrical Schematic - ANSI/CSA (All Option With Kubota Diesel Engine) 34
3.23a. Electrical Schematic - CE (All Option With Kubota Diesel Engine) 35
3.23b. Electrical Schematic - CE (All Option With Kubota Diesel Engine) 36

3.1. Hydraulic Symbol Chart

LINE CROSSING	VARIABLE DISPLACEMENT PUMP	SHUTTLE VALV	VELOCITY FUSE
LINE JOINED	HAND PUMP	ACCUMULATOR, GAS CHARGED	 SINGLE ACTING CYLINDER
HYDRAULIC TANK	 RELIEF VALVE	CUSHION CYLINDER	DOUBLE ACTING CYLINDER
HYDRAULIC FILTER WITH BYPASS	 PRESSURE REDUCING VALVE	PRESSURE SWITCH	 DOUBLE ACTING DOUBLE RODDED
ELECTRIC MOTOR	FIXED ORIFICE	 MOTION CONTROL VALVE	SPRING APPLIED HYDRAULIC RELEASED BRAKE
ENGINE	ADJUSTABLE FLOW CONTROL	 FLOW DIVIDER COMBINER	BRAKE CYLINDER
FIXED DISPLACEMENT PUMP	CHECK VALVE	 COUNTER BALANCE VALVE	ROTARY ACTUATOR
 THREE POSITION FOUR WAY PROPORTIONAL	OIL COOLER	VALVE COIL	BI DIRECTIONAL HYDRAULIC MOTOR
 SERIES PARALLEL HYDRAULIC MOTOR	TWO POSITION TWO WAY NORMALLY CLOSED	TWO POSITION THREE WAY	 THREE POSITION FOUR WAY CLOSED CENTER OPEN PORT
TWO POSITION TWO WAY NORMALLY OPEN	TWO POSITION THREE WAY	 THREE POSITION FOUR WAY CLOSED CENTER CLOSED PORT	 THREE POSITION FOUR WAY PROPORTIONAL
 PRESSURE TRANSDUCER	MAIN LINES S	PILOT LINES D	VARIABLE DISPLACEMENT HYDRAULIC MOTOR
 SERVO	UICK DISCONNECT		

3.2. Electrical Symbol Chart

WIRE CROSSING	HOURMETER	KEY SWITCH	ANGLE TRANSDUCER
WIRES JOINED	LIGHT	FOOT SWITCH	PRESSURE TRANSDUCER
BATTERY	HYDRAULIC VALVE COIL	TOGGLE SWITCH	LIMIT SWITCH N.O.
GROUND	PROPORTIONAL HYDRAULIC VALVE COIL	PUSH BUTTON	LIMIT SWITCH N.O. HELD CLOSED
FUSE	ELECTRIC MOTOR	ROTARY SWITCH	LIMIT SWITCH N.C.
CIRCUIT BREAKER	HORN	LIMIT SWITCH	LIMIT SWITCH N.C. HELD OPEN
BATTERY CHARGE INDICATOR	EMERGENCY STOP BUTTON	CAM OPERATED LIMIT SWITCH	SILICON CONTROLLED RECTIFIER
CAPACITOR	RESISTOR	TILT SWITCH	PROXIMITY SWITCH
POTENTIOMETER	LEVEL SENSOR	SINGLE POLE SINGLE THROWN RELAY	PNP TRANSISTOR
 SINGLE POLE DOUBLE THROW RELAY	 DOUBLE POLE SINGLE THROW RELAY	 DOUBLE POLE DOUBLE THROW RELAY	NPN TRANSISTOR
 TRIPLE POLE DOUBLE THROW RELAY	DIODE	TRANSISTOR	PRESSURE/ VACUUM SWITCH
 TEMPERATURE SWITCH			

3.3. Hydraulic Schematic Parts List

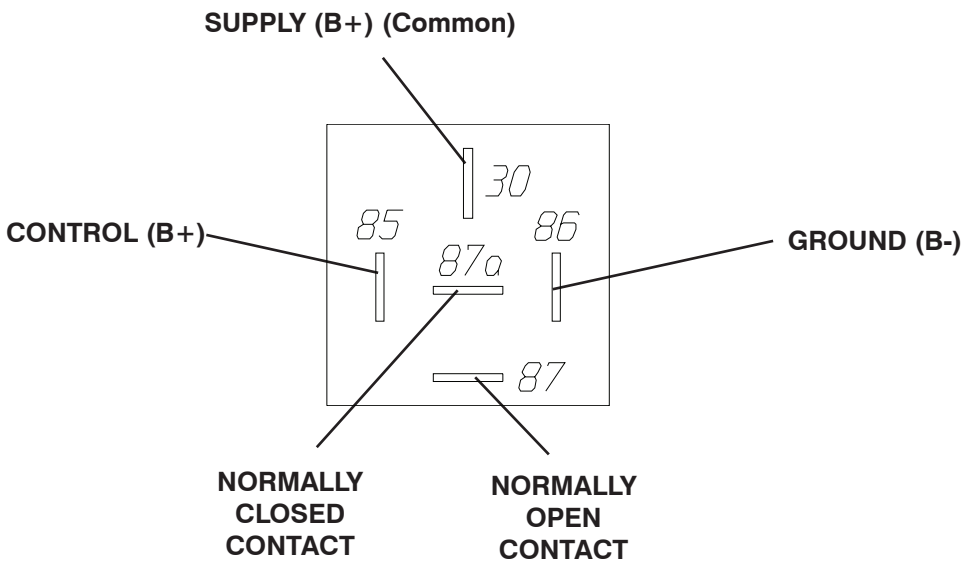
Index No.	Skyjack Part No.	Qty.	Description
C1	120989	1	CYLINDER, Lower lift
C2	120989	1	CYLINDER, Upper lift
C7	135896	1	CYLINDER, Steer
C8	107752	1	CYLINDER, Cushion
C9	132694	1	CYLINDER, Outrigger left front
C10	132694	1	CYLINDER, Outrigger left front
C11	132694	1	CYLINDER, Outrigger left front
C12	132694	1	CYLINDER, Outrigger left front
CB1	137181	1	VALVE, Main counterbalance
CB2	137181	1	VALVE, Parallel counterbalance
CV1	104624	1	VALVE, Check
CV2	104624	1	VALVE, Check
CV3	104624	1	VALVE, Pilot check
CV4	104624	1	VALVE, Pilot check
CV5	104624	1	VALVE, Pilot check
CV6	104624	1	VALVE, Pilot check
CV7	104115	1	VALVE, Pilot check
CV8	104115	1	VALVE, Pilot check
CV9	104115	1	VALVE, Pilot check
CV10	104115	1	VALVE, Pilot check
F1	136405	1	FILTER ASSEMBLY
FD1	137185	1	VALVE, Flow divider
HP2	110652	1	PUMP, Brake hand
2H-13	103655	1	VALVE, Lowering **(ANSI/CSA)**
2H-13-1	107269	1	VALVE, Holding (lower cylinder) **(ANSI/CSA)**
2H-13-2	107269	1	VALVE, Holding (upper cylinder) **(ANSI/CSA)**
2H-13B	103655	1	VALVE, Lowering **(CE)**
2H-13B-1	107269	1	VALVE, Holding (lower cylinder) **(CE)**
2H-13B-2	107269	1	VALVE, Holding (upper cylinder) **(CE)**
2H-17A	114365	1	VALVE, Large pump dump **(ANSI/CSA)**
2H-17B	114365	1	VALVE, Large pump dump **(CE)**
2H-17C	103655	1	VALVE, Holding outrigger
2H-18B	103656	1	VALVE, Small pump dump **(ANSI/CSA)**
2H-18C	103656	1	VALVE, Small pump dump **(CE)**
2H-20B	111937	1	VALVE, High speed
2H-86D	103655	1	VALVE, Hydraulic generator
3H-14A	106273	1	VALVE, Lift
3H-30	103623	1	VALVE, Brake
4H-15A	139256	1	VALVE, Reverse drive
4H-15B	128318	1	VALVE, Parallel reverse drive
4H-16A	139256	1	VALVE, Forward drive
4H-16B	128318	1	VALVE, Parallel forward drive

Parts list continued on following page.

3.3. Hydraulic Schematic Parts List (Continued)

Index No.	Skyjack Part No.	Qty.	Description
			Parts list continued from previous page.
4H-20A	139351	1	VALVE, Series/parallel
4H-23	128318	1	VALVE, Right steer
4H-24	128318	1	VALVE, Left steer
4H-71	128318	1	VALVE, Retract outrigger left front
4H-72	128318	1	VALVE, Retract outrigger right front
4H-73	128318	1	VALVE, Retract outrigger right rear
4H-74	128318	1	VALVE, Retract outrigger left rear
4H-75	128318	1	VALVE, Extend outrigger left front
4H-76	128318	1	VALVE, Extend outrigger right front
4H-77	128318	1	VALVE, Extend outrigger right rear
4H-78	128318	1	VALVE, Extend outrigger left rear
MI	137479	1	MOTOR, Front left
M2	137479	1	MOTOR, Front right
M3	137480	1	MOTOR, Rear right
M4	137480	1	MOTOR, Rear left
MB1	137125	1	MANIFOLD BLOCK, Main
MB2	139450	1	MANIFOLD BLOCK, Splitter
MB3	106688		MANIFOLD BLOCK, Lower holding valve
MB4	108778	1	MANIFOLD BLOCK, Upper holding valve
MB5	139830	1	MANIFOLD BLOCK, Sandwich
MB6	139450	1	MANIFOLD BLOCK, Splitter
MB8	111970	1	MANIFOLD BLOCK, Outrigger
MB9	146109	1	MANIFOLD BLOCK, Hydraulic generator
O1	105281	1	ORIFICE, 0.067 diameter
O2	137510	AR	ORIFICE, Lowering (Ø 0.106) **(Model 6826)**
	137509	AR	ORIFICE, Lowering (Ø 0.089) **(Model 6832)**
O3	137510	AR	ORIFICE, Lowering (Ø 0.106) **(Model 6826)**
	137509	AR	ORIFICE, Lowering (Ø 0.089) **(Model 6832)**
O4	137508	2	ORIFICE, Brake (Ø 0.028)
P1	114201	1	PUMP, Dual hydraulic (0.671/ 0.366)
PT1	134432	1	TRANSDUCER, Pressure **(CE)**
R1	104534	1	VALVE, System relief
R2	104534	1	VALVE, Lift relief
R3	106557	1	VALVE, Relief
R4	106557	1	VALVE, Relief
R5	104534	1	VALVE, Drive relief
V1	107271	1	VALVE, Emergency lowering
V2	137182	1	VALVE, Freewheel
V6	113752	1	VALVE, Brake auto reset

3.4. Electrical Parts List



Index No.	Skyjack Part No.	Qty.	Description
8CCR	127035	1	ENABLE RELAY
9CR2	127131	1	RELAY, 12 Volt (outrigger enable)
9CR3	127131	1	RELAY, 12 Volt (outrigger enable proof)
10BCR	127035	1	RELAY, 12 Volt 40 Amp (main power)
10CR1	127035	1	RELAY, 12 Volt 40 Amp
10CR2	127035	1	RELAY, 12 Volt 40 Amp
15CR	127035	1	RELAY, 12 Volt 40 Amp (reverse drive)
16CR	127035	1	RELAY, 12 Volt 40 Amp (forward drive)
17CR	127035	1	RELAY, 12 Volt 40 Amp (small pump)
17DCR	127131	1	RELAY, 12 Volt (outrigger lift disable)
19CR	127035	1	RELAY, 12 Volt 40 Amp (large pump)
20CR	127035	1	RELAY, 12 Volt 40 Amp (series/parallel drive)
20ACR1	127035	1	RELAY, 12 Volt 40 Amp (series/parallel)
20ACR2	127035	1	RELAY, 12 Volt 40 Amp (series/parallel)
28ACR1	127035	1	RELAY, 12 Volt 40 Amp (small pump dump enable)
28ACR2	127035	1	RELAY, 12 Volt 40 Amp (large pump dump enable)
28CR	127035	1	RELAY, 12 Volt 40 Amp (down enable) **(CE)**
28ECR1	127035	1	RELAY, 12 Volt 40 Amp (small pump dump auxiliary enable) **(CE)**
28ECR2	127035	1	RELAY, 12 Volt 40 Amp (large pump dump auxiliary enable) **(CE)**
28ECR3	127035	1	RELAY, 12 Volt 40 Amp (auxiliary down enable) **(CE)**
31CR	127035	1	RELAY, 12 Volt 40 Amp (glow plug)
32ACR	127035	1	CONTACTOR, Engine start
32CR1	127035	1	RELAY, 12 Volt 40 Amp
32CR2	127035	1	RELAY, 12 Volt 40 Amp (engine start)

Parts list continued on the following page.

3.4. Electrical Parts List (Continued)

Index No.	Skyjack Part No.	Qty.	Description
			Parts list continued from the previous page.
33CR	127035	1	RELAY, Power on-demand
34ACR	127035	1	RELAY, 12 Volt 40 Amp (throttle)
35ACR	127035	1	RELAY, 12 Volt 40 Amp (throttle enable)
35CR	127035	1	RELAY, 12 Volt 40 Amp (elevation/high speed cutout)
61CR	127131	1	RELAY, 12 Volt 40 Amp (outrigger drive enable)
65CR	127131	1	RELAY, 12 Volt (outrigger lift enable)
86ACR	127035	1	RELAY, 12 Volt 40 Amp (hydraulic generator stop)
86BCR	127035	1	RELAY, 12 Volt 40 Amp (hydraulic generator latching)
86CCR	127035	1	RELAY, 12 Volt 40 Amp (hydraulic generator)
2G-11	(Ref.)	1	SOLENOID, Gas shutoff (Kubota Dual Fuel Engine)
AT1	130440	1	TRANSDUCER, Angle **(CE)**
B1	103295	1	BATTERY, 12 Volt (WET)
BP-29	103056	1	BEEPER, 7.5 - 16 VDC **(ANSI/CSA)**
	117967	1	BEEPER, XL - 600 9 - 28 VDC **(CE)**
CB1	137919	1	CIRCUIT BREAKER, 25 Amp
CB3	137919	1	CIRCUIT BREAKER, 25 Amp
CPS1	136172	1	SENSOR, Cranshaft position
CRD1	137355	1	CABLE ASSEMBLY, Control box
CRD2	137356	1	CABLE ASSEMBLY, Scissor arm **(Model 6826)**
	137363	1	CABLE ASSEMBLY, Scissor arm **(Model 6832)**
CRD3	137354	1	CABLE ASSEMBLY, Electrical panel
CS-31A	103007	1	SOLENOID, Choke
DXX	102921	AR	DIODE
EGP1	KUBOTA	1	PLUG, Engine glow
F1	128595	1	FUSE, 300 Amp
F4	138091	1	FUSE, 125 Amp (Electrical inverter option)
FL-22	121476	1	FLASHING LIGHT
FL-29	103743	1	FLASHER
FP	136119	1	PUMP, Electric fuel
GPL1	133133	1	GLOW PLUG INDICATOR LIGHT
GPT1	137868	1	GLOW PLUG TIMER
H1	146652	1	HORN, 12 Volt
HTS-34C	103007	1	SOLENOID, High throttle
ICM1	136121	1	MODULE, Igniter control
IG	137857	1	ALTERNATOR (Kubota DF902)
	136101	1	ALTERNATOR (Kubota DF972)
IGC1	136106	1	COIL, Ignition
IGC2	136106	1	COIL, Ignition
INV1	138094	1	INVERTER, 125 Amp
LED-1	137785	1	LIGHT, Power on
LED-2	137785	1	LIGHT, Power on (Base controls)
LS5	122010	1	LIMIT SWITCH, High drive cutout/tilt override
LS61	138060	1	LIMIT SWITCH, Front left outrigger up
			Parts list continued on the following page.

3.4. Electrical Parts List (Continued)

Index No.	Skyjack Part No.	Qty.	Description
			Parts list continued from the previous page.
LS62	138060	1	LIMIT SWITCH, Front right outrigger up
LS63	138060	1	LIMIT SWITCH, Rear right outrigger up
LS64	138060	1	LIMIT SWITCH, Rear left outrigger up
LS65	138059	1	LIMIT SWITCH, Front left outrigger down
LS66	138059	1	LIMIT SWITCH, Front right outrigger down
LS67	138059	1	LIMIT SWITCH, Rear right outrigger down
LS68	138059	1	LIMIT SWITCH, Rear left outrigger down
OCM1	132804	1	MODULE, Outrigger Auto-Level Control
OPS1	102838	1	SWITCH, Oil pressure
PT1	134432	1	TRANSDUCER, Pressure 3000 psi **(CE)**
S1	119726	1	SWITCH, Main power disconnect
S2	102853	1	N.O. CONTACT BLOCK, Up/down switch
S3	-	1	SWITCH ASSEMBLY, Lift/Drive Low/Drive
	137793	1	• HEAD, Switch Selector (3-Way)
	137788	1	• SWITCH, Base Assembly
	137783	3	• • BLOCK, N.C. Contact
	137782	4	• • BLOCK, N.O. Contact
	137781	1	• • LATCH, Mounting
S4	-	1	SWITCH ASSEMBLY, Emergency stop
	137795	1	• HEAD, Switch Illuminated Emergency Stop (Red)
	137791	1	• SWITCH, Base Assembly
	137785	1	• • SWITCH, LED Block (Red)
	137783	2	• • BLOCK, N.C. Contact
	137781	1	• • LATCH, Mounting
S6	137790	1	SWITCH BASE ASSEMBLY, NC/LED (Red) (Base controls)
	137795	1	SWITCH ASSEMBLY, Emergency stop
S7	132537	1	CONTROLLER ASSEMBLY, Drive/steer
S7-1	122869	1	• SWITCH W/ACTUATOR, 2nd Speed
S7-2	122877	1	• SWITCH, Right steer
S7-3	122877	1	• SWITCH, Left steer
S7-4	122869	1	• SWITCH W/ACTUATOR, Reverse drive
S7-5	122869	1	• SWITCH W/ACTUATOR, Forward drive
S7-6	122869	1	• SWITCH W/ACTUATOR, 3rd Speed
S7-7	122872	1	• SWITCH Joystick Enable
S8	-	1	SWITCH ASSEMBLY, Horn
	137792	1	• HEAD, Switch Push Button (Black)
	137786	1	• SWITCH, Base Assembly
	137782	1	• • BLOCK, N.O. Spring Contact
	137781	1	• • LATCH, Mounting
S9A	102853	1	SWITCH, Outrigger Enable
S9B	127132	1	SWITCH, Outrigger enable
S10	133762	1	N.O. CONTACT BLOCK, Platform/idle/base switch (Base controls)
			Parts list continued on the following page.

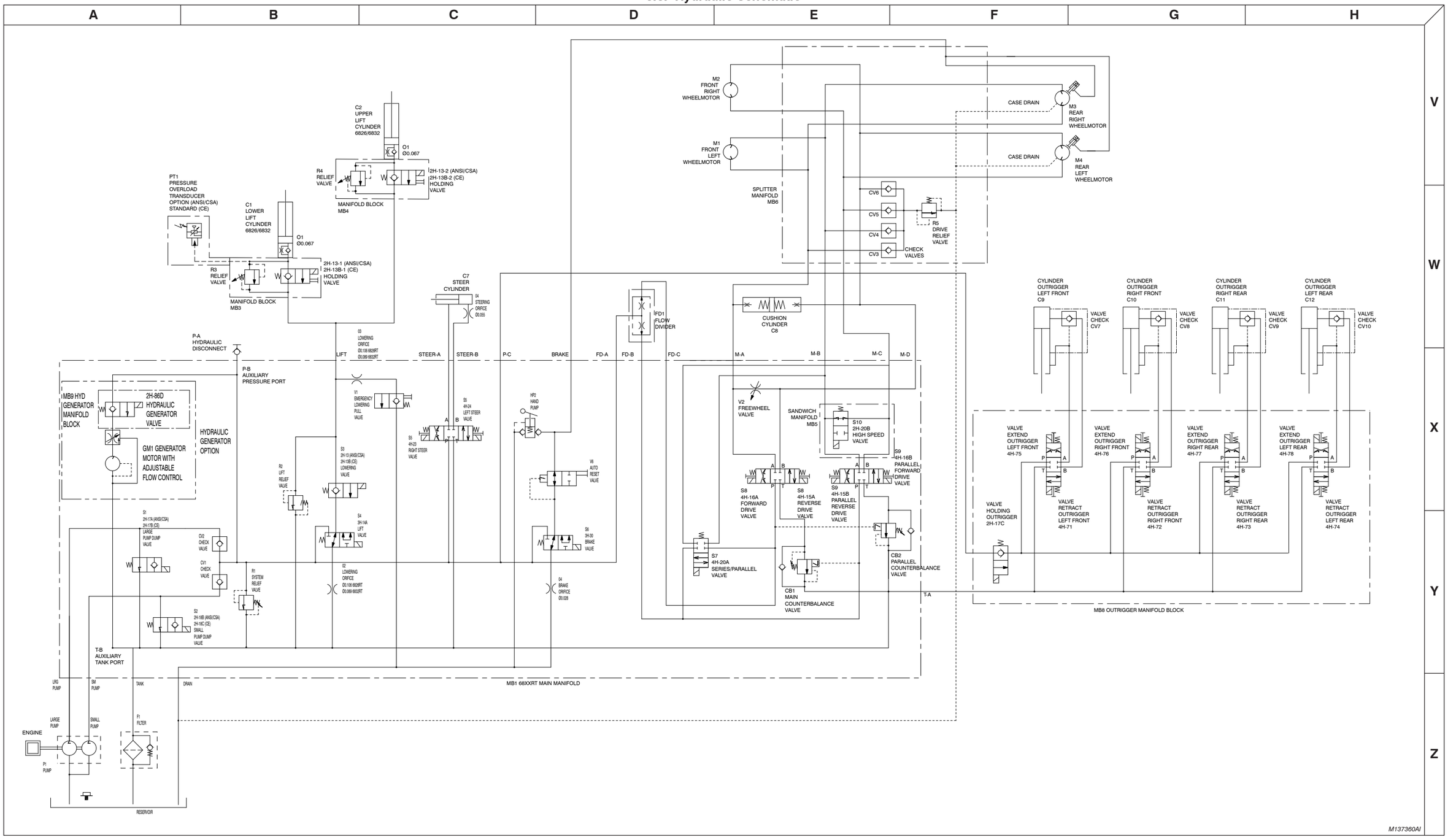
3.4. Electrical Parts List (Continued)

Index No.	Skyjack Part No.	Qty.	Description
			Parts list continued from the previous page.
S14	-	1	SWITCH ASSEMBLY, Low/High Throttle Select
	137794	1	• HEAD, Switch Selector (2-Way)
	137786	1	• SWITCH, Base Assembly
	137782	1	• • BLOCK, N.O. Spring Contact
	137781	1	• • LATCH, Mounting
S15	-	1	SWITCH ASSEMBLY, Start
	137792	1	• HEAD, Switch Push Button (Black)
	137786	1	• SWITCH, Base Assembly
	137782	1	• • BLOCK, N.O. Spring Contact
	137781	1	• • LATCH, Mounting
S20	102853	1	SWITCH, Front left outrigger up/down toggle
S20A	127132	1	SWITCH, Front left outrigger rocker
S21	102853	1	SWITCH, Front right outrigger up/down toggle
S21A	127132	1	SWITCH, Front right outrigger rocker
S22	102853	1	SWITCH, Rear right outrigger up/down toggle
S22A	127132	1	SWITCH, Rear right outrigger rocker
S23	102853	1	SWITCH, Rear left outrigger up/down toggle
S23A	127132	1	SWITCH, Rear left outrigger rocker
S24	102853	1	SWITCH, Auto-Level Outrigger
S31	102692	1	SWITCH, Engine Glow Plug
S32	102692	1	SWITCH, Engine start push-button
S33	115747	1	SWITCH, Fuel select
TPS1	113400	1	SWITCH, Engine temperature
TS1	146661	1	TILT SWITCH
TT	103336	1	HOUR METER
2H-13	103613	1	COIL, 12 Volt lowering valve **(ANSI/CSA)**
2H-13B	103613	1	COIL, 12 Volt lowering valve **(CE)**
2H-13-1	103613	1	COIL, 12 Volt lower lift cylinder holding valve **(ANSI/CSA)**
2H-13-2	103613	1	COIL, 12 Volt upper lift cylinder holding valve **(ANSI/CSA)**
2H-13B-1	103613	1	COIL, 12 Volt lower lift cylinder holding valve **(CE)**
2H-13B-2	103613	1	COIL, 12 Volt upper lift cylinder holding valve **(CE)**
2H-17A	106272	1	COIL, 12 Volt large pump dump valve **(ANSI/CSA)**
2H-17B	106272	1	COIL, 12 Volt large pump dump valve **(CE)**
2H-17C	106272	1	COIL, 12 Volt holding outrigger valve
2H-18B	103613	1	COIL, 12 Volt small pump dump valve **(ANSI/CSA)**
2H-18C	103613	1	COIL, 12 Volt small pump dump valve **(CE)**
2H-86D	103613	1	COIL, 12 Volt hydraulic generator
2P-50-1	125793	1	SOLENOID, Propane lockoff valve, vaporizer (Kubota Dual Fuel Engine)
3H-14A	106272	1	COIL, 12 Volt lift valve
3H-30	103613	1	COIL, 12 Volt brake valve
4H-15A	128321	1	COIL, Reverse drive valve
4H-15B	128321	1	COIL, Parallel reverse drive valve
4H-16A	128321	1	COIL, Forward drive valve
4H-16B	128321	1	COIL, Parallel forward drive valve
4H-20A	137513	1	COIL, 12 Volt series/parallel drive
4H-23	128321	1	COIL, Right steer valve
			Parts list continued on the following page.

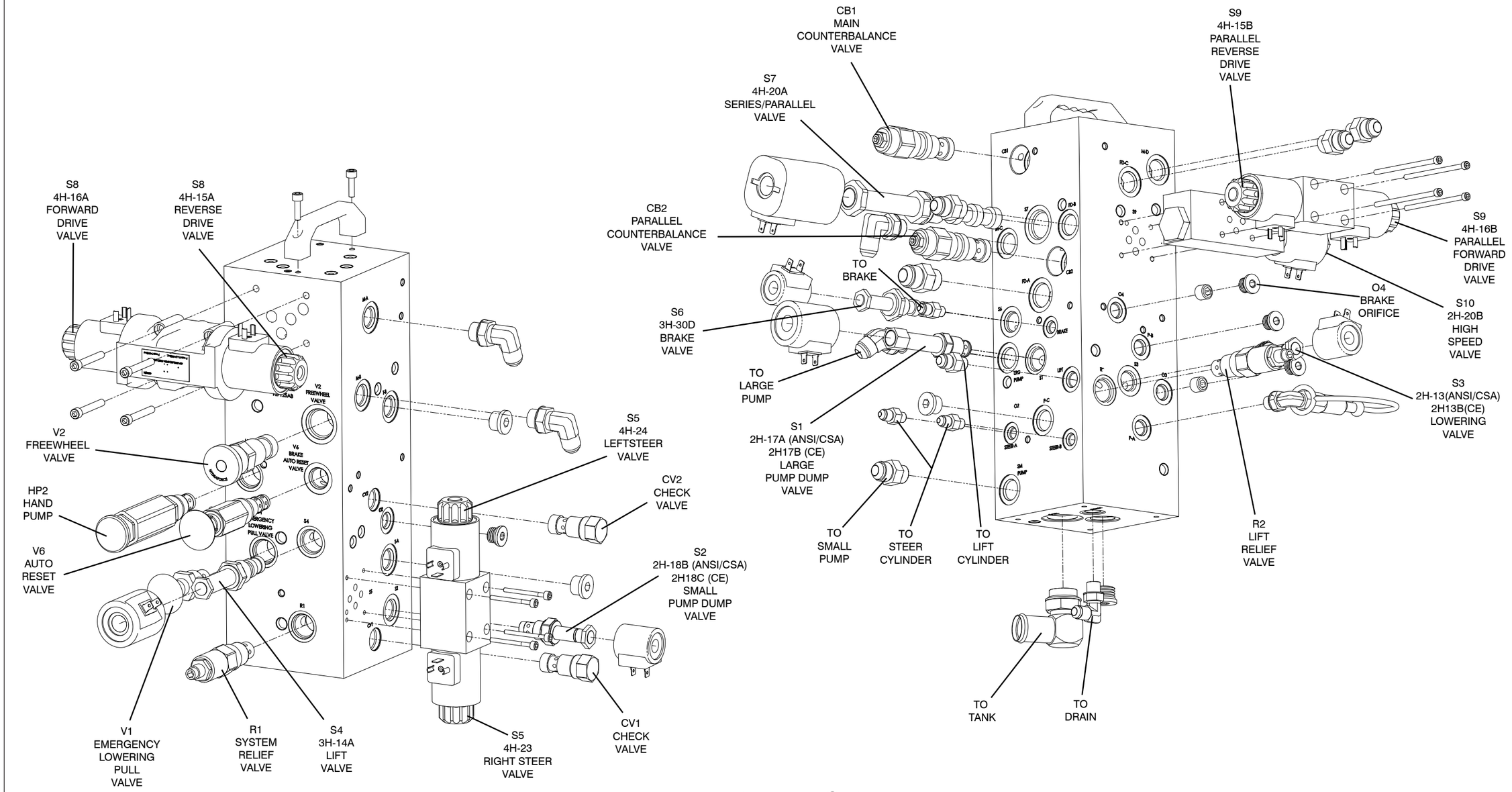
3.4. Electrical Parts List (Continued)

Index No.	Skyjack Part No.	Qty.	Description
			Parts list continued from the previous page.
4H-24	128321	1	COIL, Left steer valve
4H-71	128321	1	COIL, 12 Volt front left retract outrigger
4H-72	128321	1	COIL, 12 Volt front right retract outrigger
4H-73	128321	1	COIL, 12 Volt rear right retract outrigger
4H-74	128321	1	COIL, 12 Volt rear left retract outrigger
4H-75	128321	1	COIL, 12 Volt front left extend outrigger
4H-76	128321	1	COIL, 12 Volt front right extend outrigger
4H-77	128321	1	COIL, 12 Volt rear right extend outrigger
4H-78	128321	1	COIL, 12 Volt rear left extend outrigger

3.5. Hydraulic Schematic



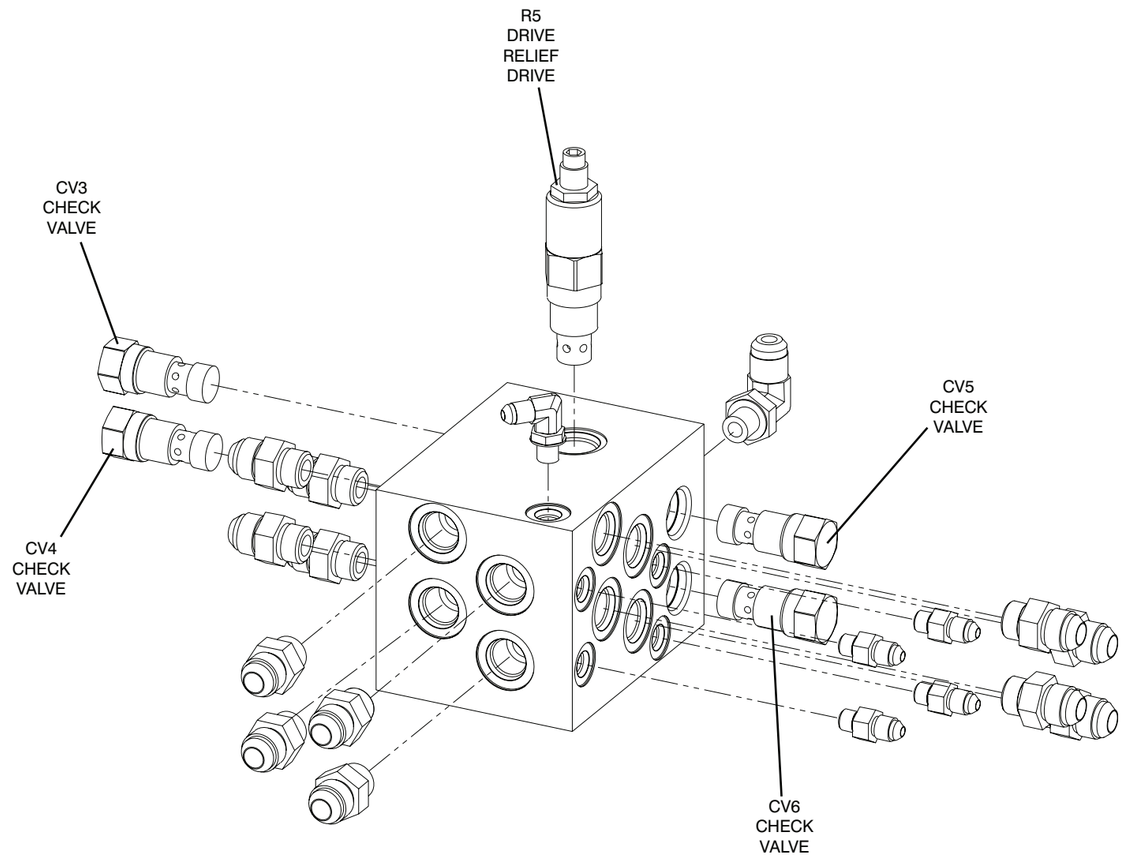
3.6. Hydraulic Manifolds And Ports Identification



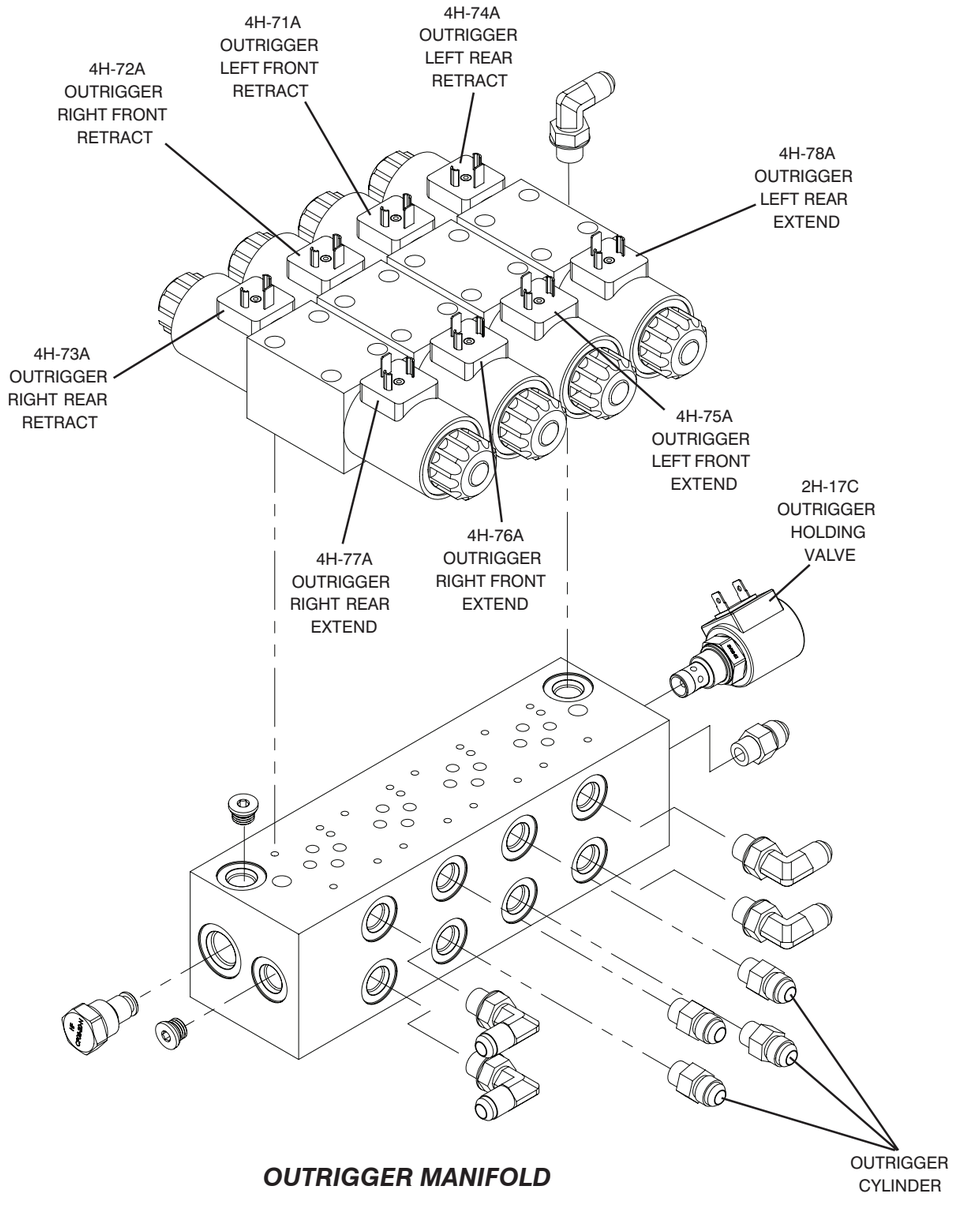
MAIN MANIFOLD

M138189AE_3

3.6. Hydraulic Manifolds And Ports Identification (Continued)



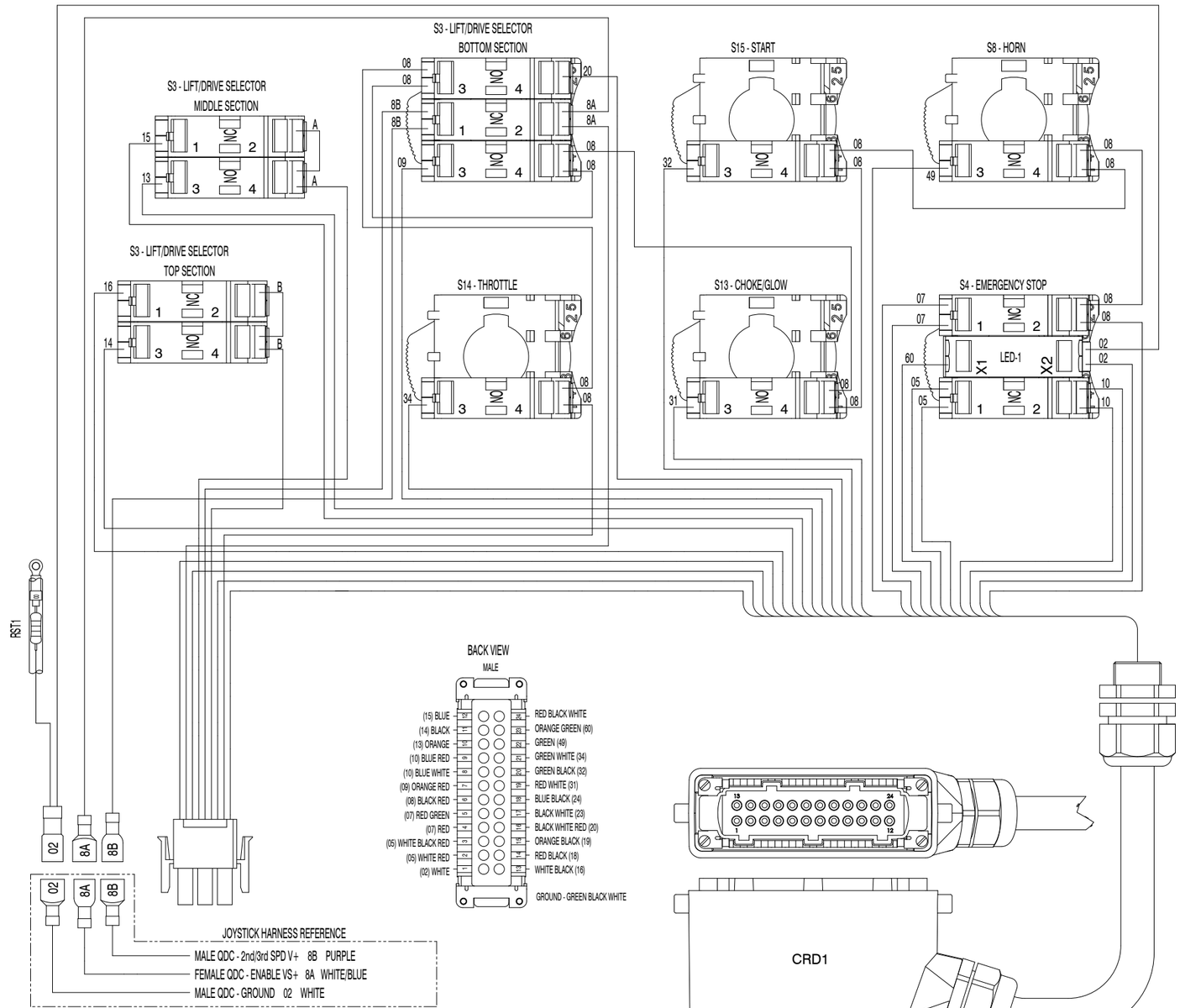
SPLITTER MANIFOLD



OUTRIGGER MANIFOLD

M138075AB_1 M138045AB_1

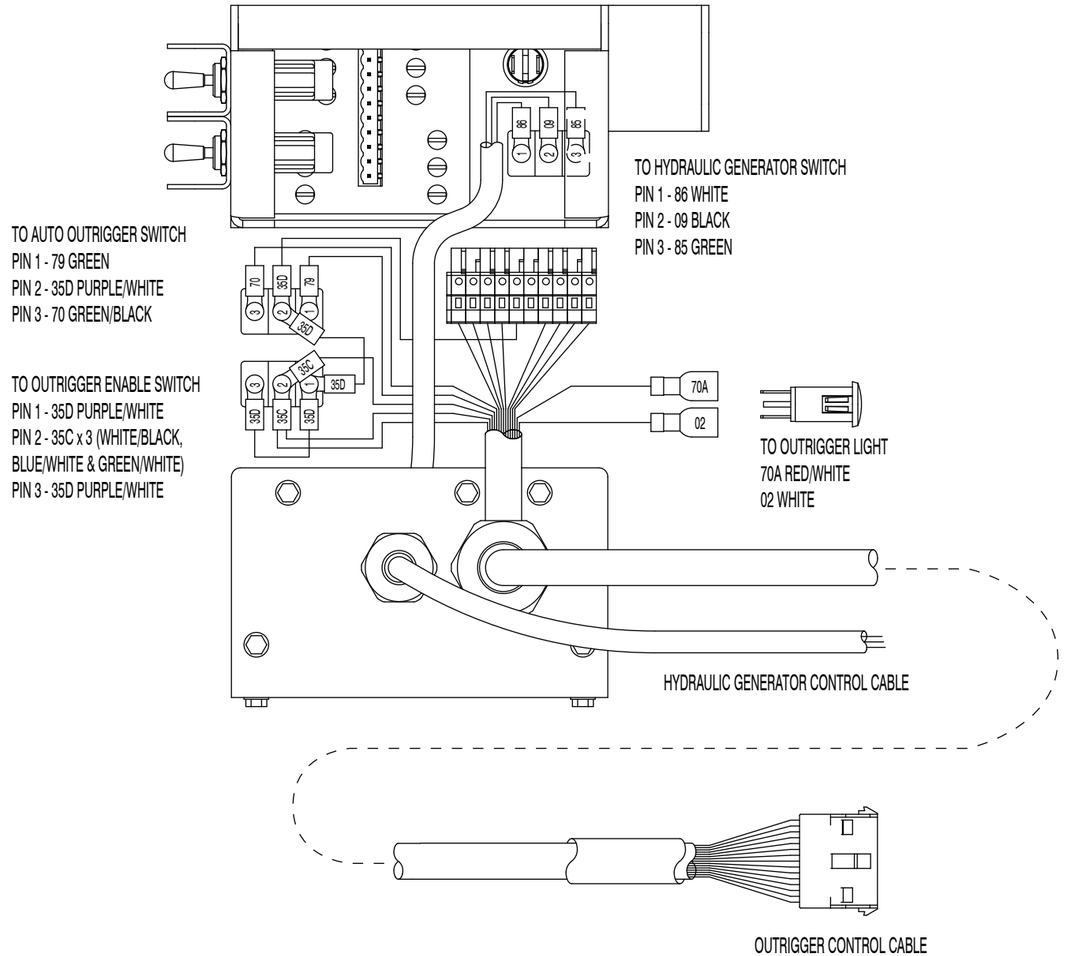
3.7. Control Box Diagram - With All Options



CONTROL BOX HARNESS		PIN # - FUNCTION	JOYSTICK HARNESS	
24	BLUE/BLACK	PIN 1 - LEFT	24	WHITE/RED
08	BLUE	PIN 2 - JOYSTICK VS+	08	WHITE/BLACK
23	BLACK/WHITE	PIN 3 - RIGHT	23	WHITE
B	RED	PIN 4 - FORWARD/UP	B	YELLOW
08B	BROWN/RED	PIN 5 - STEERING VS+	08B	WHITE/GREEN
A	PURPLE/WHITE	PIN 6 - REVERSE/DOWN	A	GREY
19	ORANGE/BLACK	PIN 7 - 2nd SPEED	19	BROWN
8A	BLUE	PIN 8 - ENABLE VS+	8A	WHITE/BLUE
18	RED/BLACK	PIN 9 - 3rd SPEED	18	RED/BLACK

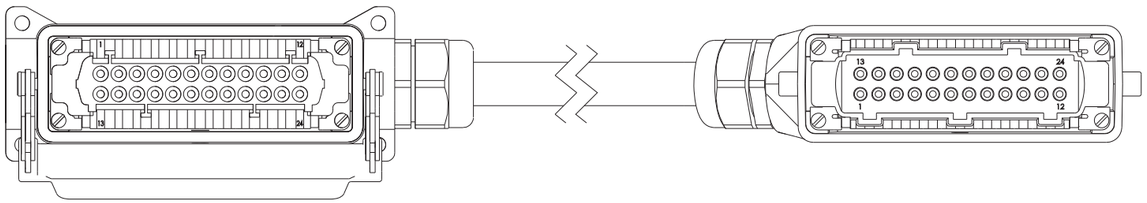
M137799AD

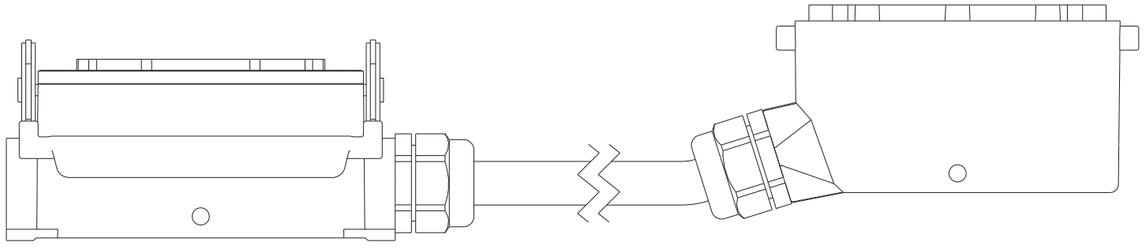
3.8. Outrigger/Hydraulic Generator Control Console Wiring

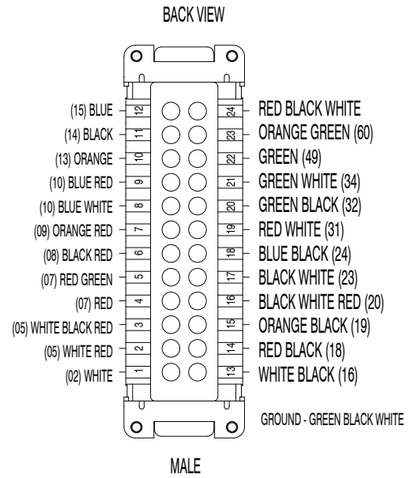

TO AUTO OUTRIGGER SWITCH
PIN 1 - 79 GREEN
PIN 2 - 35D PURPLE/WHITE
PIN 3 - 70 GREEN/BLACK
TO OUTRIGGER ENABLE SWITCH
PIN 1 - 35D PURPLE/WHITE
PIN 2 - 35C x 3 (WHITE/BLACK, BLUE/WHITE & GREEN/WHITE)
PIN 3 - 35D PURPLE/WHITE
TO HYDRAULIC GENERATOR SWITCH
PIN 1 - 86 WHITE
PIN 2 - 09 BLACK
PIN 3 - 85 GREEN
70A
02
TO OUTRIGGER LIGHT
70A RED/WHITE
02 WHITE
HYDRAULIC GENERATOR CONTROL CABLE
OUTRIGGER CONTROL CABLE

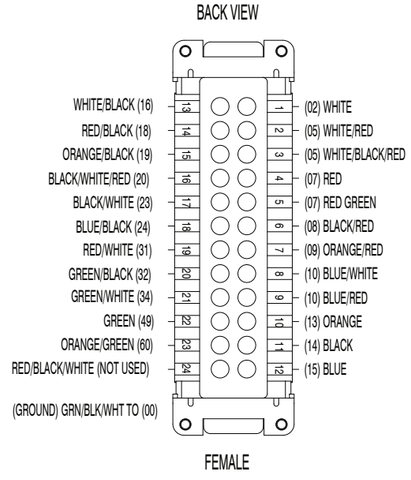
M129301AB

3.9. Scissor Arm Control Cable



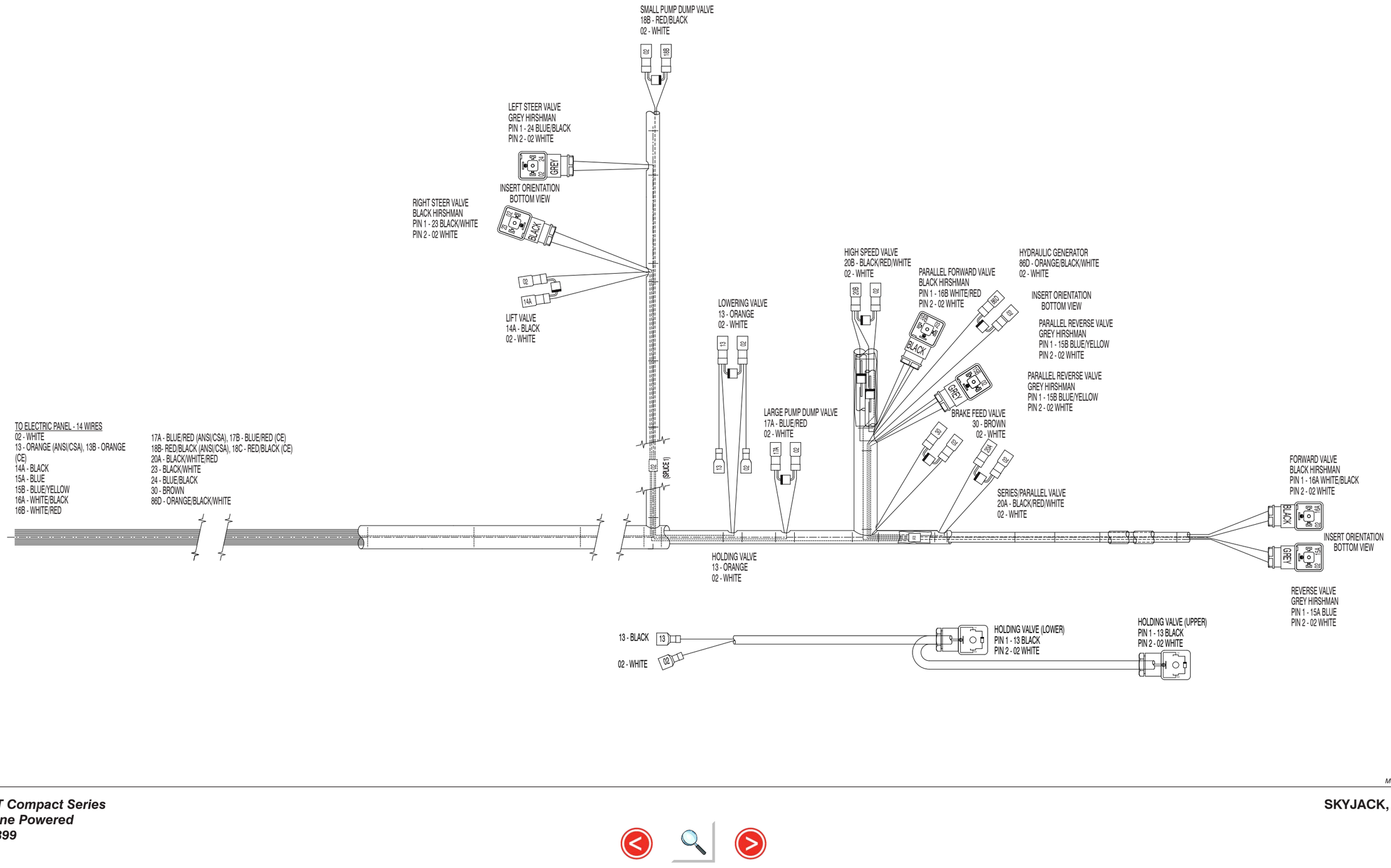




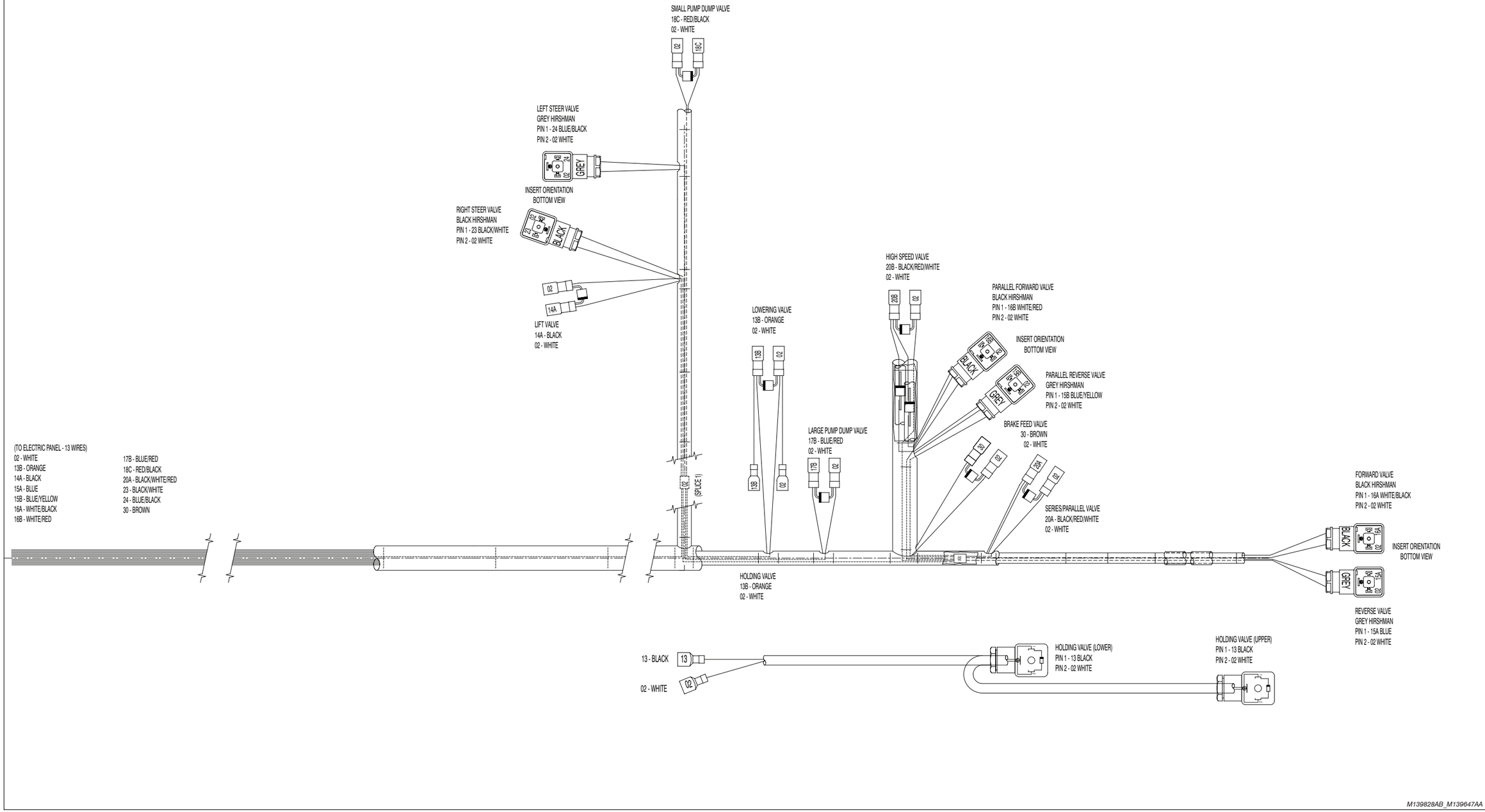


M137356AB

3.10. Main Manifold Harness Wiring Diagram - ANSI/CSA



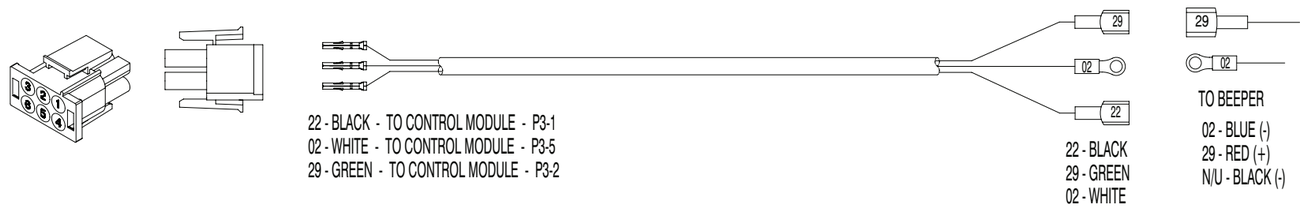
3.11. Main Manifold Harness Wiring Diagram - CE



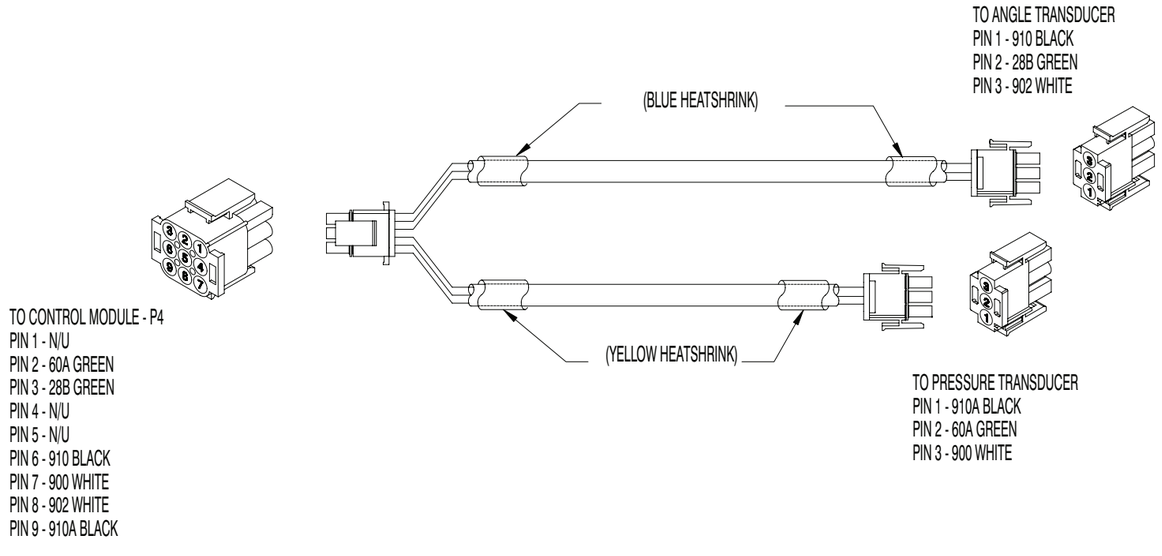
3.12. Load Sensing Harnesses

A	B	C	D	E	F	G	H

LIGHT/BEEPER HARNESS

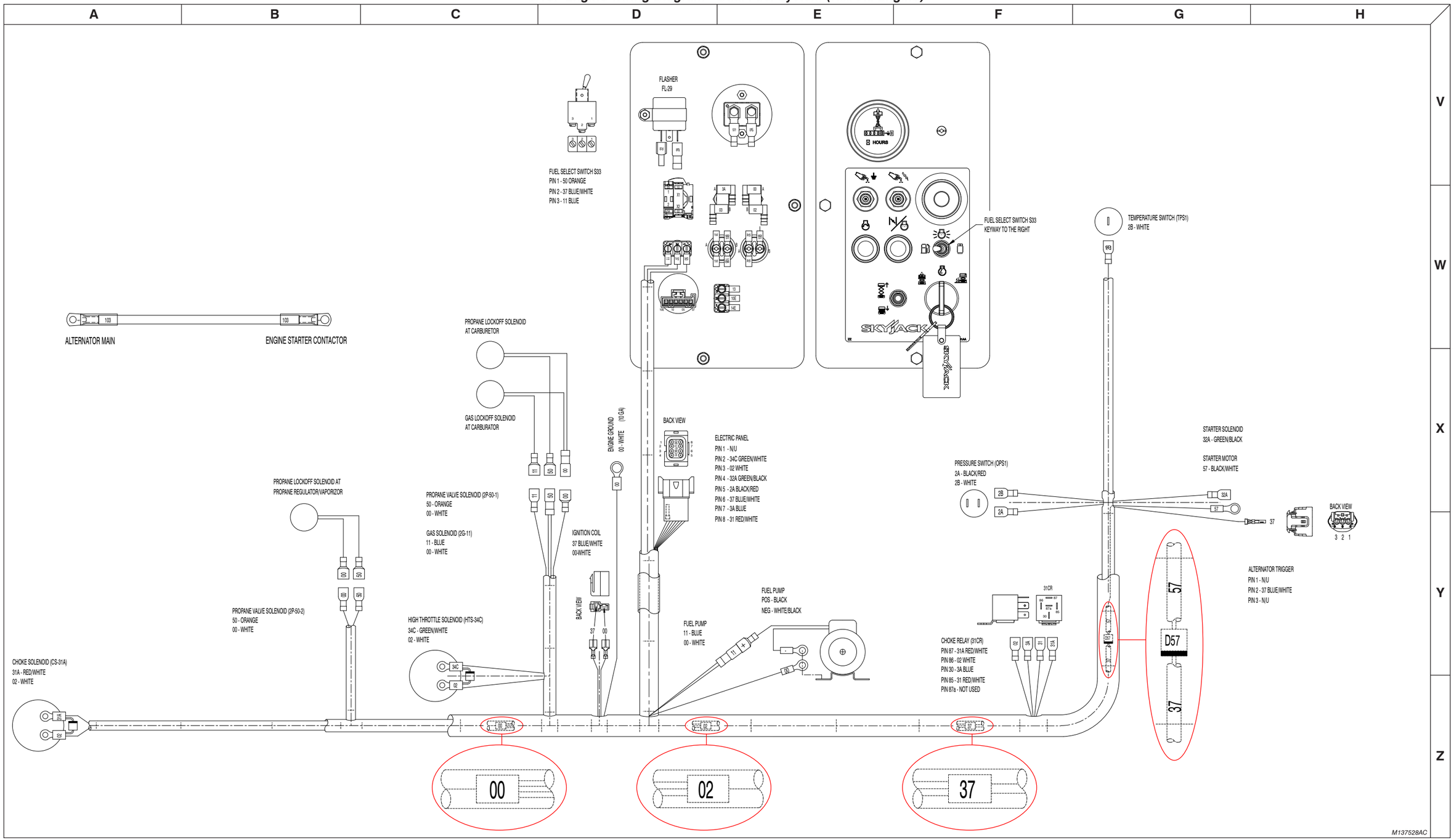


TRANSDUCER HARNESS


TO ANGLE TRANSDUCER
PIN 1 - 910 BLACK
PIN 2 - 28B GREEN
PIN 3 - 902 WHITE
(BLUE HEATSHRINK)
(YELLOW HEATSHRINK)
TO CONTROL MODULE - P4
PIN 1 - N/U
PIN 2 - 60A GREEN
PIN 3 - 28B GREEN
PIN 4 - N/U
PIN 5 - N/U
PIN 6 - 910 BLACK
PIN 7 - 900 WHITE
PIN 8 - 902 WHITE
PIN 9 - 910A BLACK
TO PRESSURE TRANSDUCER
PIN 1 - 910A BLACK
PIN 2 - 60A GREEN
PIN 3 - 900 WHITE

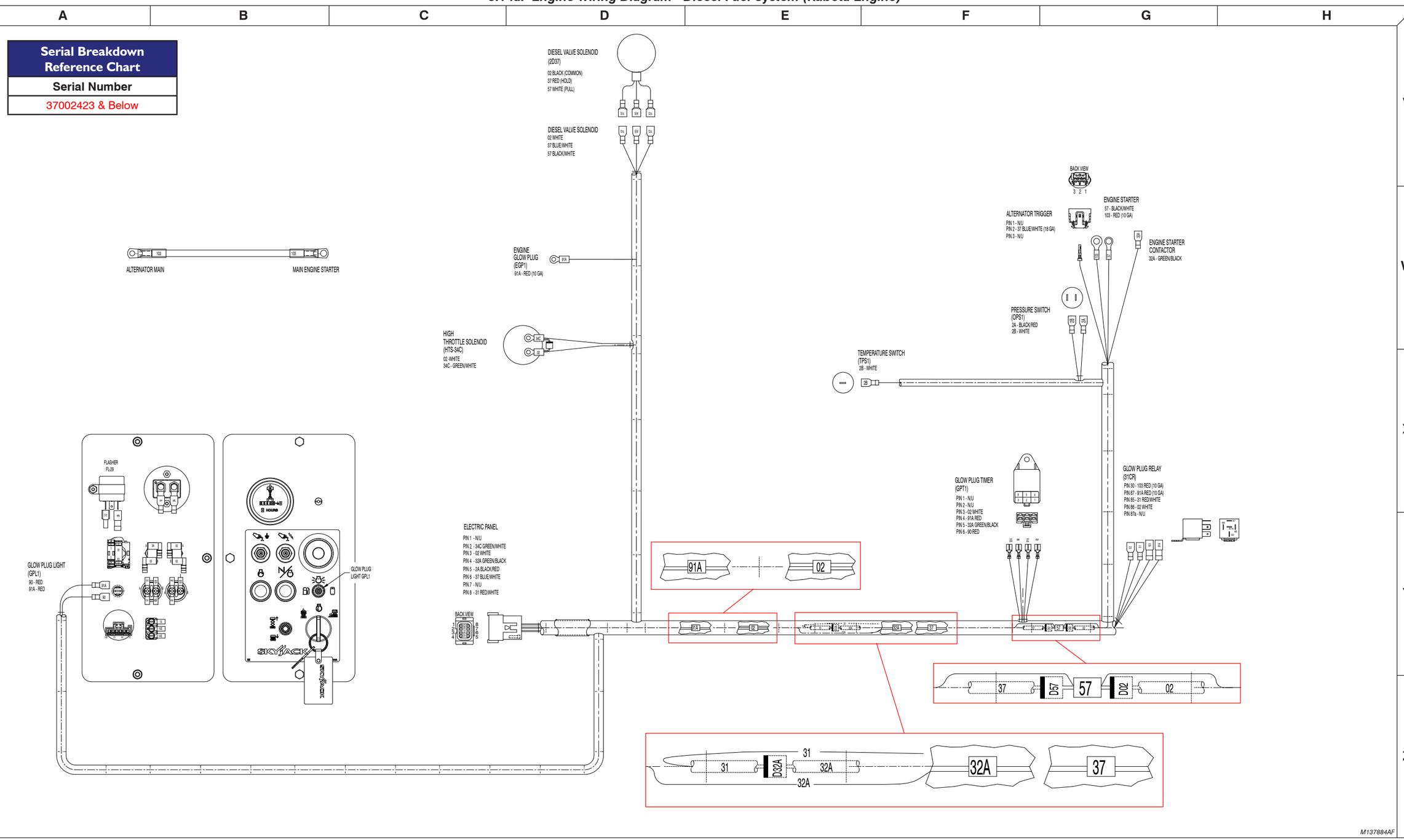
M138158AB_1

3.13. Engine Wiring Diagram - Dual Fuel System (Kubota Engine)



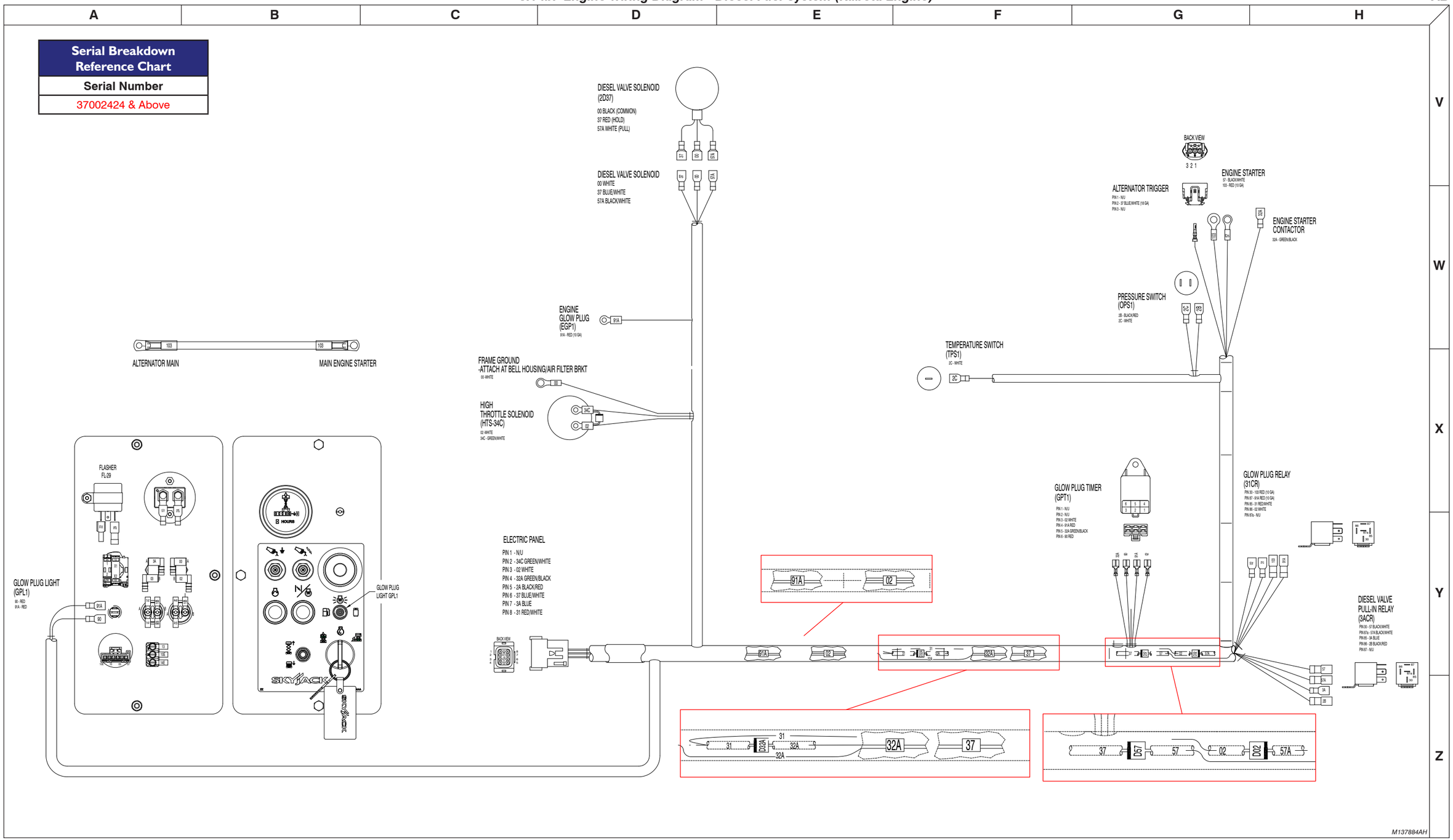
3.14a. Engine Wiring Diagram - Diesel Fuel System (Kubota Engine)

Serial Breakdown Reference Chart
Serial Number
37002423 & Below



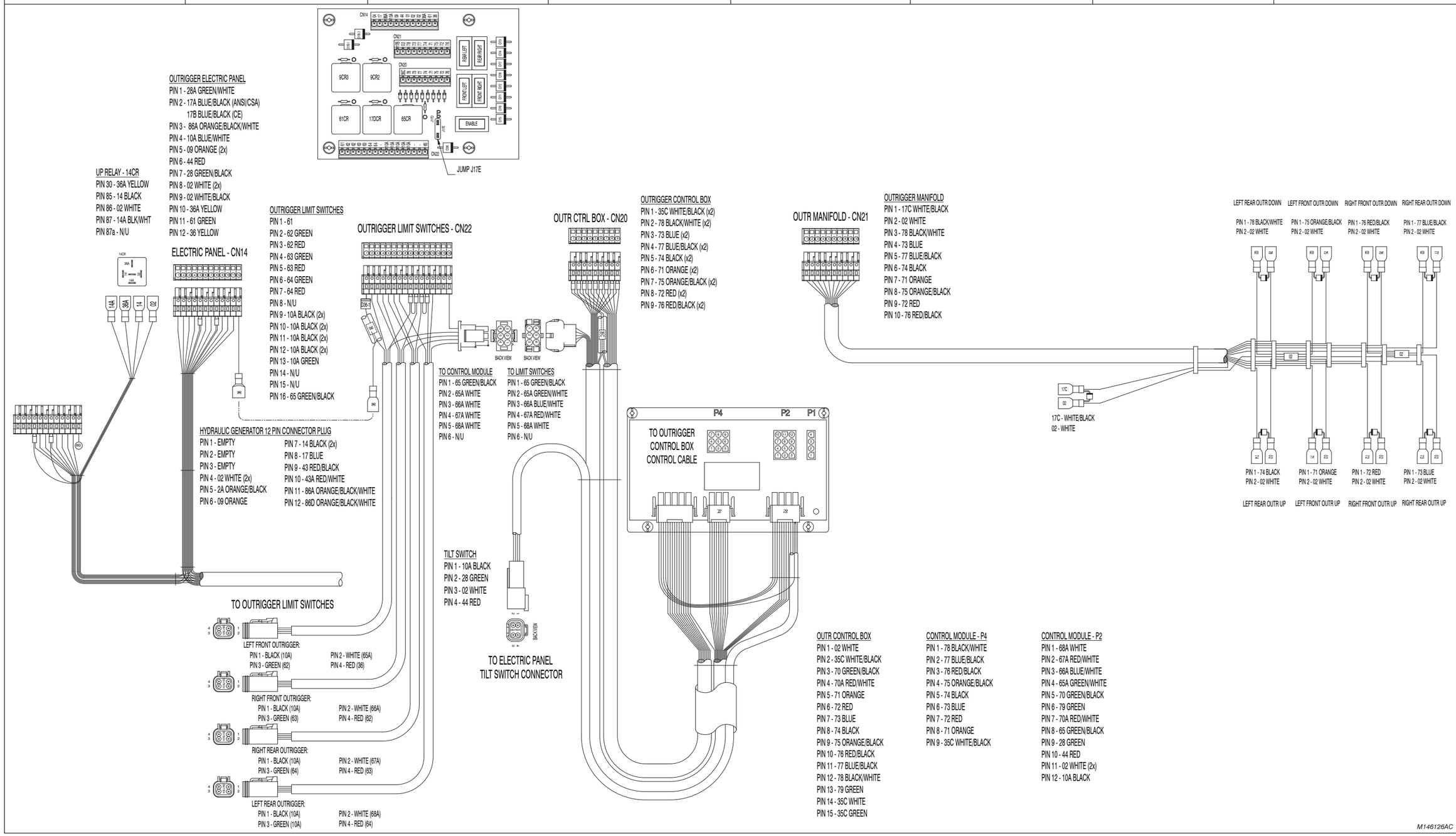
3.14b. Engine Wiring Diagram - Diesel Fuel System (Kubota Engine)

Serial Breakdown Reference Chart
Serial Number
37002424 & Above



M137884AH

3.15. Outrigger Optional Harness Diagram


OUTRIGGER ELECTRIC PANEL
PIN 1 - 28A GREEN/WHITE
PIN 2 - 17A BLUE/BLACK (ANSI/CSA)
17B BLUE/BLACK (CE)
PIN 3 - 86A ORANGE/BLACK/WHITE
PIN 4 - 10A BLUE/WHITE
PIN 5 - 09 ORANGE (2x)
PIN 6 - 44 RED
PIN 7 - 28 GREEN/BLACK
PIN 8 - 02 WHITE (2x)
PIN 9 - 02 WHITE/BLACK
PIN 10 - 36A YELLOW
PIN 11 - 61 GREEN
PIN 12 - 36 YELLOW
JUMP J17E
UP RELAY - 14CR
PIN 30 - 36A YELLOW
PIN 85 - 14 BLACK
PIN 86 - 02 WHITE
PIN 87 - 14A BLK/WHT
PIN 87a - N/U
ELECTRIC PANEL - CN14
OUTRIGGER LIMIT SWITCHES
PIN 1 - 61
PIN 2 - 62 GREEN
PIN 3 - 62 RED
PIN 4 - 63 GREEN
PIN 5 - 63 RED
PIN 6 - 64 GREEN
PIN 7 - 64 RED
PIN 8 - N/U
PIN 9 - 10A BLACK (2x)
PIN 10 - 10A BLACK (2x)
PIN 11 - 10A BLACK (2x)
PIN 12 - 10A BLACK (2x)
PIN 13 - 10A GREEN
PIN 14 - N/U
PIN 15 - N/U
PIN 16 - 65 GREEN/BLACK
HYDRAULIC GENERATOR 12 PIN CONNECTOR PLUG
PIN 1 - EMPTY
PIN 2 - EMPTY
PIN 3 - EMPTY
PIN 4 - 02 WHITE (2x)
PIN 5 - 2A ORANGE/BLACK
PIN 6 - 09 ORANGE
PIN 7 - 14 BLACK (2x)
PIN 8 - 17 BLUE
PIN 9 - 43 RED/BLACK
PIN 10 - 43A RED/WHITE
PIN 11 - 86A ORANGE/BLACK/WHITE
PIN 12 - 86D ORANGE/BLACK/WHITE
OUTRIGGER LIMIT SWITCHES - CN22
TO CONTROL MODULE
PIN 1 - 65 GREEN/BLACK
PIN 2 - 65A WHITE
PIN 3 - 66A WHITE
PIN 4 - 67A WHITE
PIN 5 - 68A WHITE
PIN 6 - N/U
TO LIMIT SWITCHES
PIN 1 - 65 GREEN/BLACK
PIN 2 - 65A GREEN/WHITE
PIN 3 - 66A BLUE/WHITE
PIN 4 - 67A RED/WHITE
PIN 5 - 68A WHITE
PIN 6 - N/U
OUTR CTRL BOX - CN20
OUTRIGGER CONTROL BOX
PIN 1 - 35C WHITE/BLACK (x2)
PIN 2 - 78 BLACK/WHITE (x2)
PIN 3 - 73 BLUE (x2)
PIN 4 - 77 BLUE/BLACK (x2)
PIN 5 - 74 BLACK (x2)
PIN 6 - 71 ORANGE (x2)
PIN 7 - 75 ORANGE/BLACK (x2)
PIN 8 - 72 RED (x2)
PIN 9 - 76 RED/BLACK (x2)
TILT SWITCH
PIN 1 - 10A BLACK
PIN 2 - 28 GREEN
PIN 3 - 02 WHITE
PIN 4 - 44 RED
TO ELECTRIC PANEL
TILT SWITCH CONNECTOR
TO OUTRIGGER CONTROL BOX CONTROL CABLE
P4
P2
P1
OUTR MANIFOLD - CN21
OUTRIGGER MANIFOLD
PIN 1 - 17C WHITE/BLACK
PIN 2 - 02 WHITE
PIN 3 - 78 BLACK/WHITE
PIN 4 - 73 BLUE
PIN 5 - 77 BLUE/BLACK
PIN 6 - 74 BLACK
PIN 7 - 71 ORANGE
PIN 8 - 75 ORANGE/BLACK
PIN 9 - 72 RED
PIN 10 - 76 RED/BLACK
17C - WHITE/BLACK
02 - WHITE
LEFT REAR OUTR DOWN
PIN 1 - 78 BLACK/WHITE
PIN 2 - 02 WHITE
LEFT FRONT OUTR DOWN
PIN 1 - 75 ORANGE/BLACK
PIN 2 - 02 WHITE
RIGHT FRONT OUTR DOWN
PIN 1 - 76 RED/BLACK
PIN 2 - 02 WHITE
RIGHT REAR OUTR DOWN
PIN 1 - 77 BLUE/BLACK
PIN 2 - 02 WHITE
PIN 1 - 74 BLACK
PIN 2 - 02 WHITE
PIN 1 - 71 ORANGE
PIN 2 - 02 WHITE
PIN 1 - 72 RED
PIN 2 - 02 WHITE
PIN 1 - 73 BLUE
PIN 2 - 02 WHITE
LEFT REAR OUTR UP
LEFT FRONT OUTR UP
RIGHT FRONT OUTR UP
RIGHT REAR OUTR UP
TO OUTRIGGER LIMIT SWITCHES
LEFT FRONT OUTRIGGER:
PIN 1 - BLACK (10A)
PIN 3 - GREEN (62)
PIN 2 - WHITE (65A)
PIN 4 - RED (36)
RIGHT FRONT OUTRIGGER:
PIN 1 - BLACK (10A)
PIN 3 - GREEN (63)
PIN 2 - WHITE (66A)
PIN 4 - RED (62)
RIGHT REAR OUTRIGGER:
PIN 1 - BLACK (10A)
PIN 3 - GREEN (64)
PIN 2 - WHITE (67A)
PIN 4 - RED (63)
LEFT REAR OUTRIGGER:
PIN 1 - BLACK (10A)
PIN 3 - GREEN (10A)
PIN 2 - WHITE (68A)
PIN 4 - RED (64)
OUTR CONTROL BOX
PIN 1 - 02 WHITE
PIN 2 - 35C WHITE/BLACK
PIN 3 - 70 GREEN/BLACK
PIN 4 - 70A RED/WHITE
PIN 5 - 71 ORANGE
PIN 6 - 72 RED
PIN 7 - 73 BLUE
PIN 8 - 74 BLACK
PIN 9 - 75 ORANGE/BLACK
PIN 10 - 76 RED/BLACK
PIN 11 - 77 BLUE/BLACK
PIN 12 - 78 BLACK/WHITE
PIN 13 - 79 GREEN
PIN 14 - 35C WHITE
PIN 15 - 35C GREEN
CONTROL MODULE - P4
PIN 1 - 78 BLACK/WHITE
PIN 2 - 77 BLUE/BLACK
PIN 3 - 76 RED/BLACK
PIN 4 - 75 ORANGE/BLACK
PIN 5 - 74 BLACK
PIN 6 - 73 BLUE
PIN 7 - 72 RED
PIN 8 - 71 ORANGE
PIN 9 - 35C WHITE/BLACK
CONTROL MODULE - P2
PIN 1 - 68A WHITE
PIN 2 - 67A RED/WHITE
PIN 3 - 66A BLUE/WHITE
PIN 4 - 65A GREEN/WHITE
PIN 5 - 70 GREEN/BLACK
PIN 6 - 79 GREEN
PIN 7 - 70A RED/WHITE
PIN 8 - 65 GREEN/BLACK
PIN 9 - 28 GREEN
PIN 10 - 44 RED
PIN 11 - 02 WHITE (2x)
PIN 12 - 10A BLACK
M146126AC

3.16. Hydraulic Generator Electrical Panel Assembly

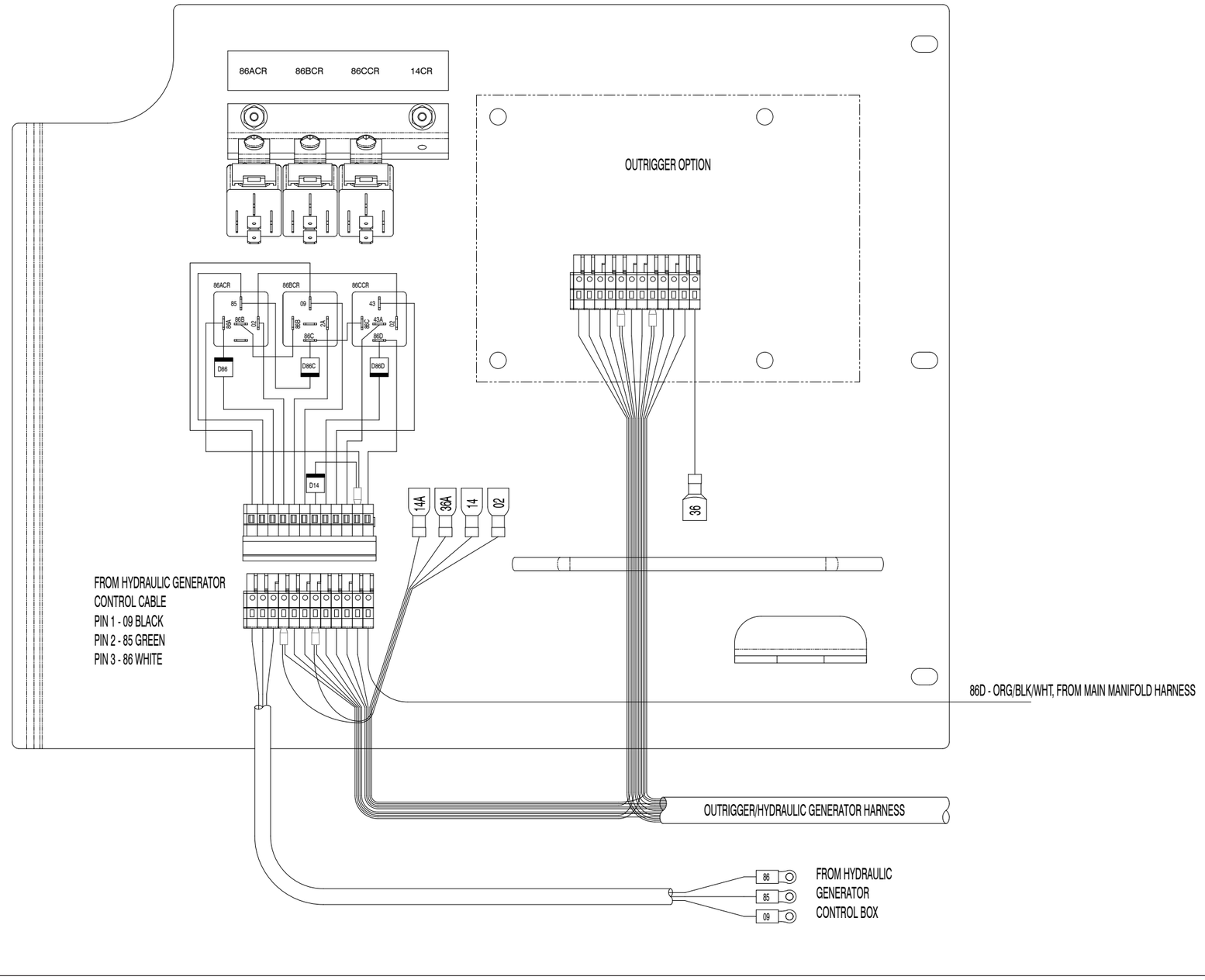
A	B	C	D	E	F	G	H

WIRE# 86ACR - HYDRAULIC GENERATOR STOP RELAY
W3 PIN 85 - 86A ORANGE/BLACK/WHITE
W4 PIN 86 - 02 WHITE
W2 PIN 30 - 85 ORANGE/BLACK/WHITE
W9 PIN 87a - 86B ORANGE/BLACK/WHITE
- PIN 87 - N/U

WIRE# 86BCR - HYDRAULIC GENERATOR LATCHING RELAY
W9 PIN 85 - 86B ORANGE/BLACK/WHITE
W5 PIN 86 - 2A ORANGE/BLACK
W1 PIN 30 - 09 ORANGE
- PIN 87a - N/U
W2 PIN 87 - 86C ORANGE/BLACK/WHITE

WIRE# 86ACR - HYDRAULIC GENERATOR RELAY
W2 PIN 85 - 86C ORANGE/BLACK/WHITE
W4 PIN 86 - 02 WHITE
W7 PIN 30 - 43 RED/BLACK
W8 PIN 87a - 43A RED/WHITE
W6 PIN 87 - 86D ORANGE/BLACK/WHITE

WIRE# HYDRAULIC GENERATOR 12 PIN CONNECTOR PLUG
W1 PIN 1 - 09 ORANGE
W2 PIN 2 - 85 ORANGE/BLACK/WHITE
W3 PIN 3 - 86 ORANGE/BLACK/WHITE
W4 PIN 4 - 02 WHITE
W5 PIN 5 - 2A ORANGE/BLACK
W1 PIN 6 - 09 ORANGE
W3 PIN 7 - 14 (DIODE)
W6 PIN 8 - 17A/B BLUE/BLACK
W7 PIN 9 - 43 RED/BLACK
W8 PIN 10 - 43A RED/WHITE
W3 PIN 11 - 86A ORANGE/BLACK/WHITE
W6 PIN 12 - 86D ORANGE/BLACK/WHITE

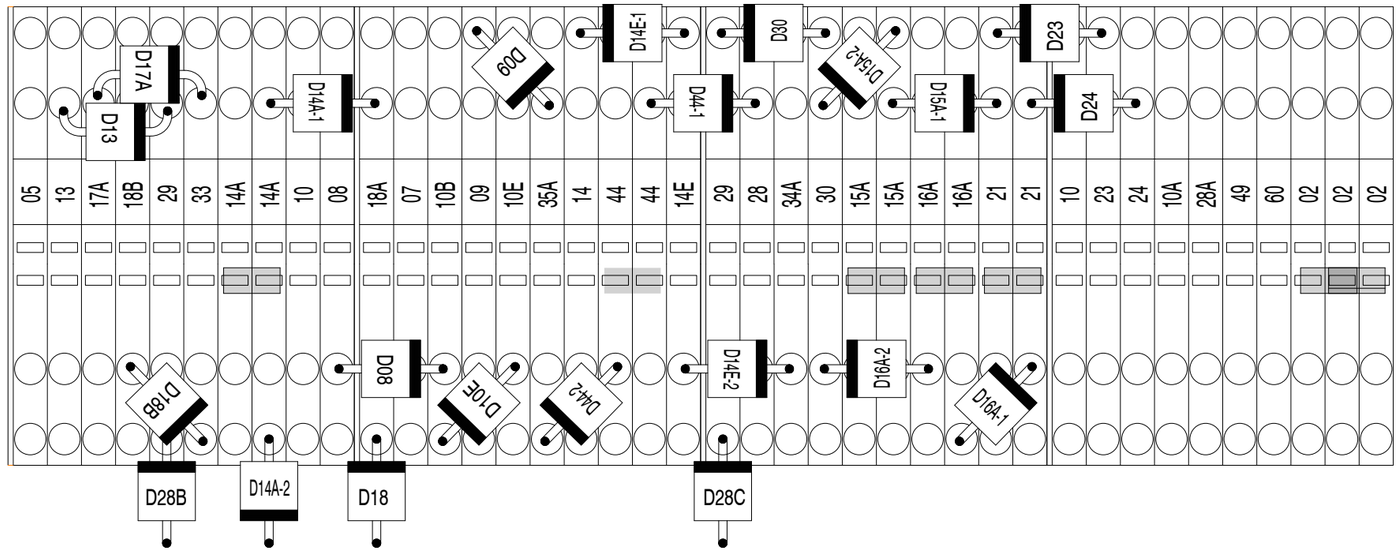


M146108AC

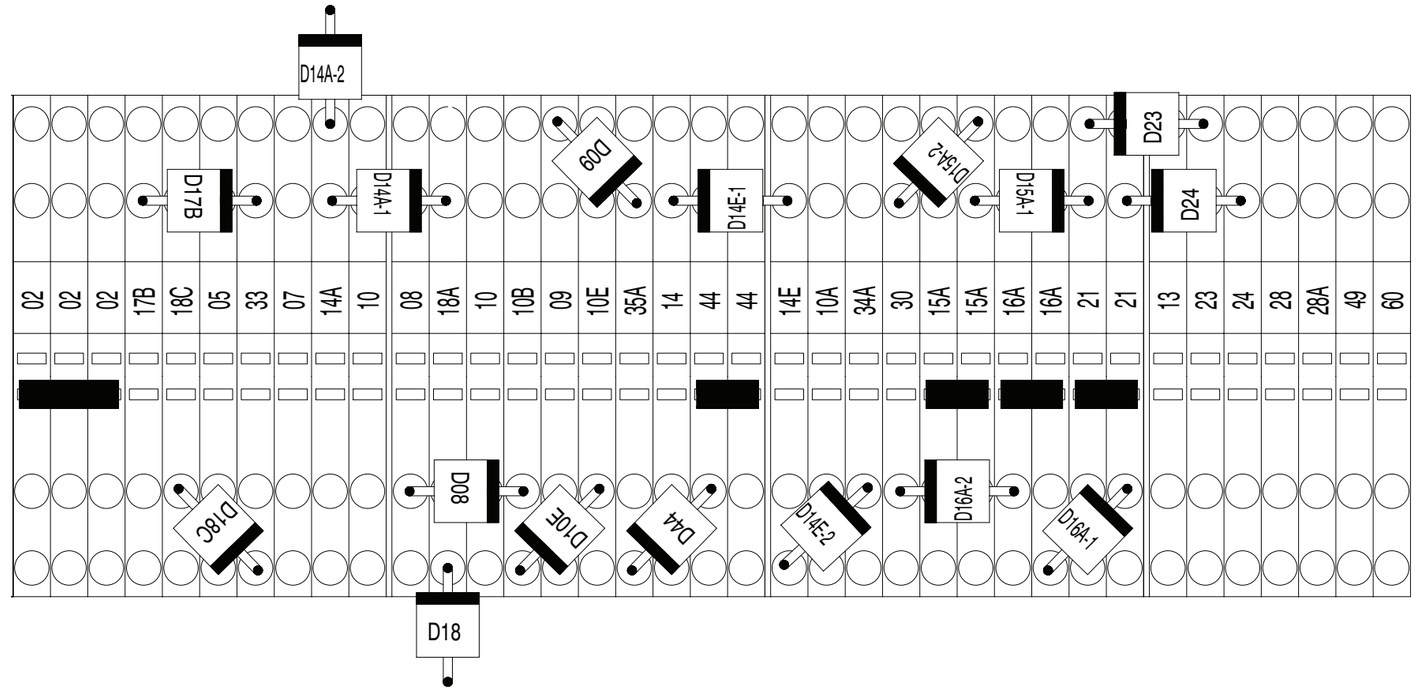
3.17. Electrical Panel Wiring Diagram - Terminal Block Details

A	B	C	D	E	F	G	H

ANSI/CSA Models



CE Models

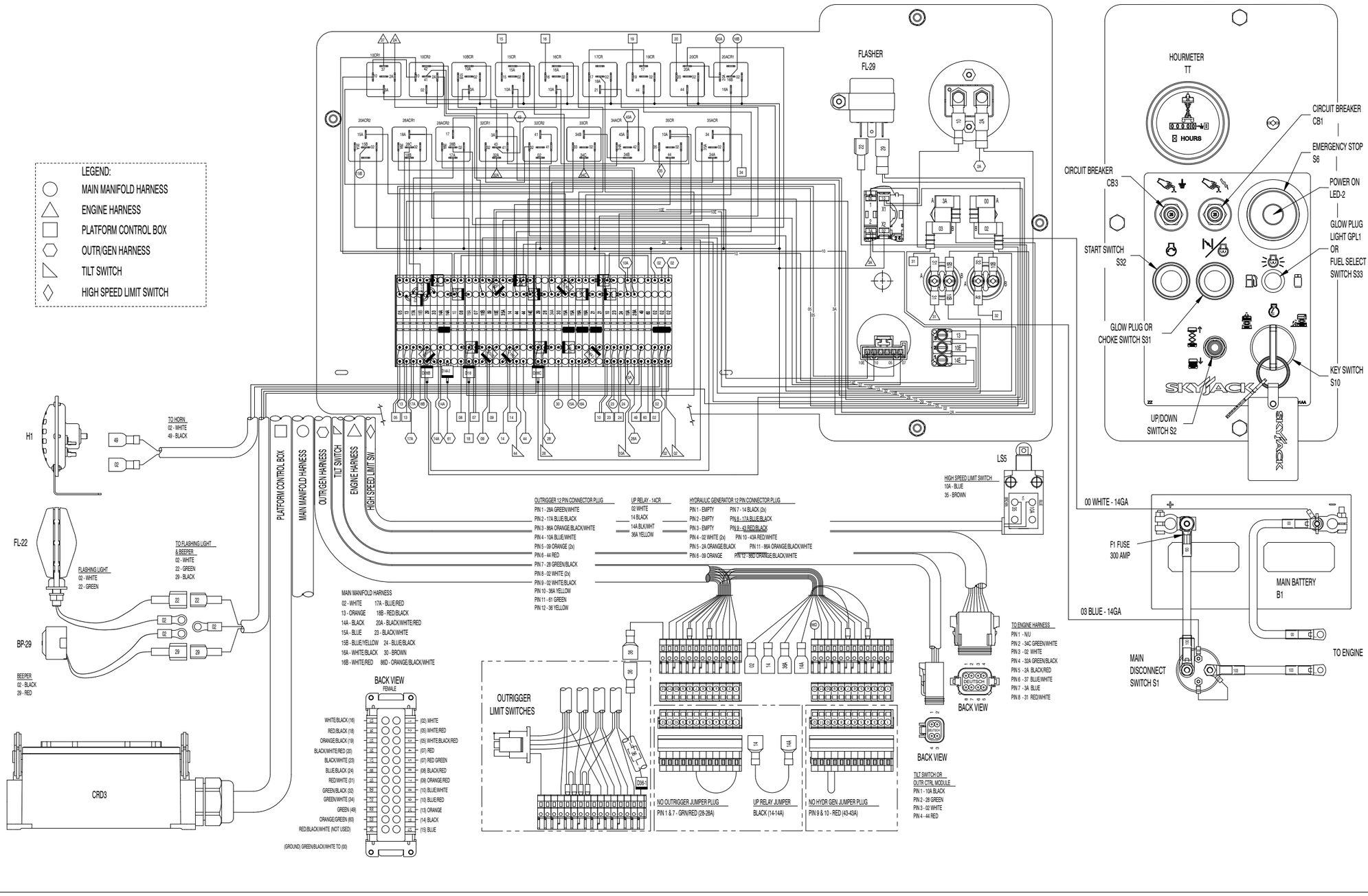


V W X Y Z

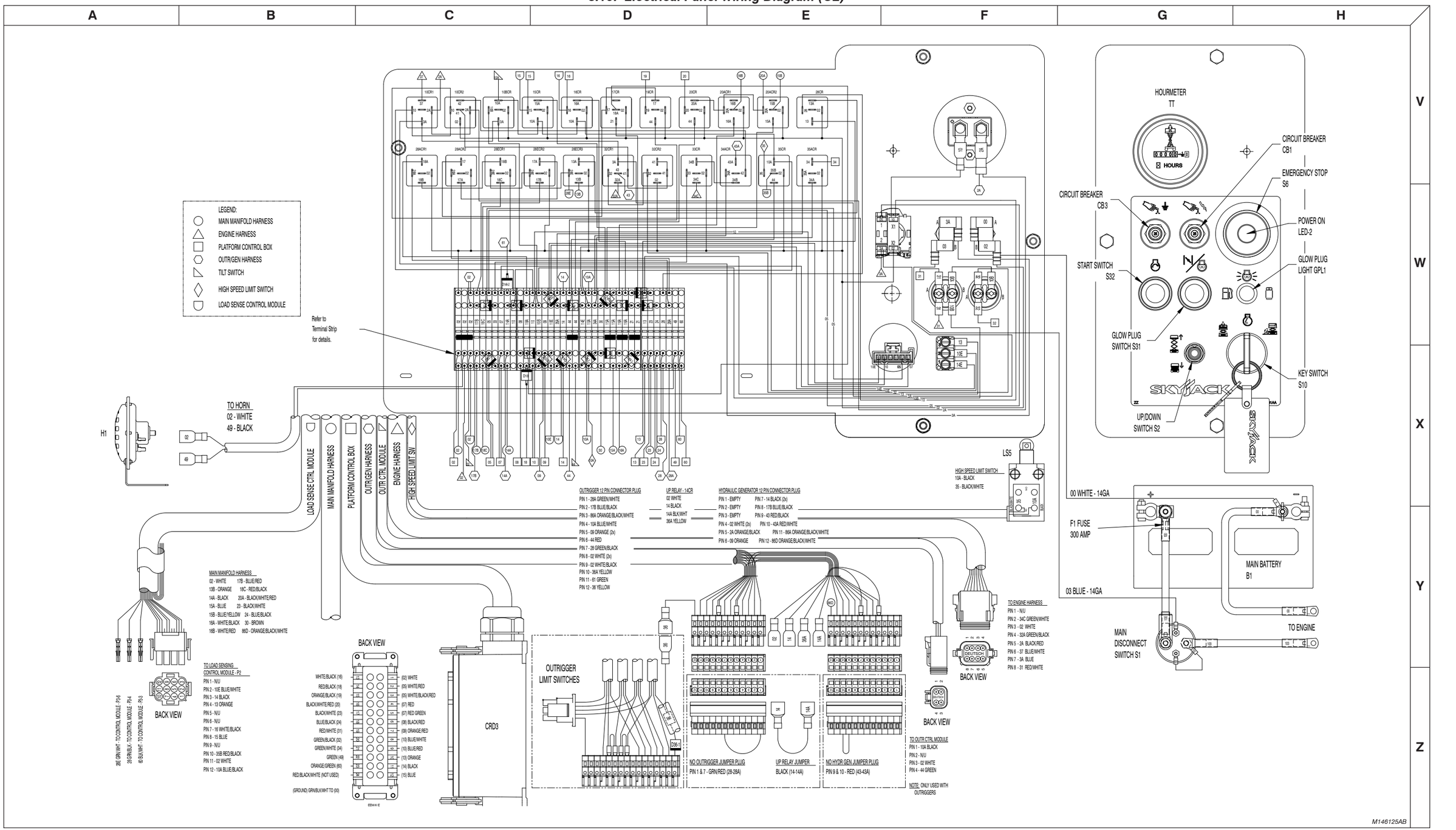
M139255AB_1 M146124AB_1

3.18. Electrical Panel Wiring Diagram (ANSI/CSA)

A	B	C	D	E	F	G	H

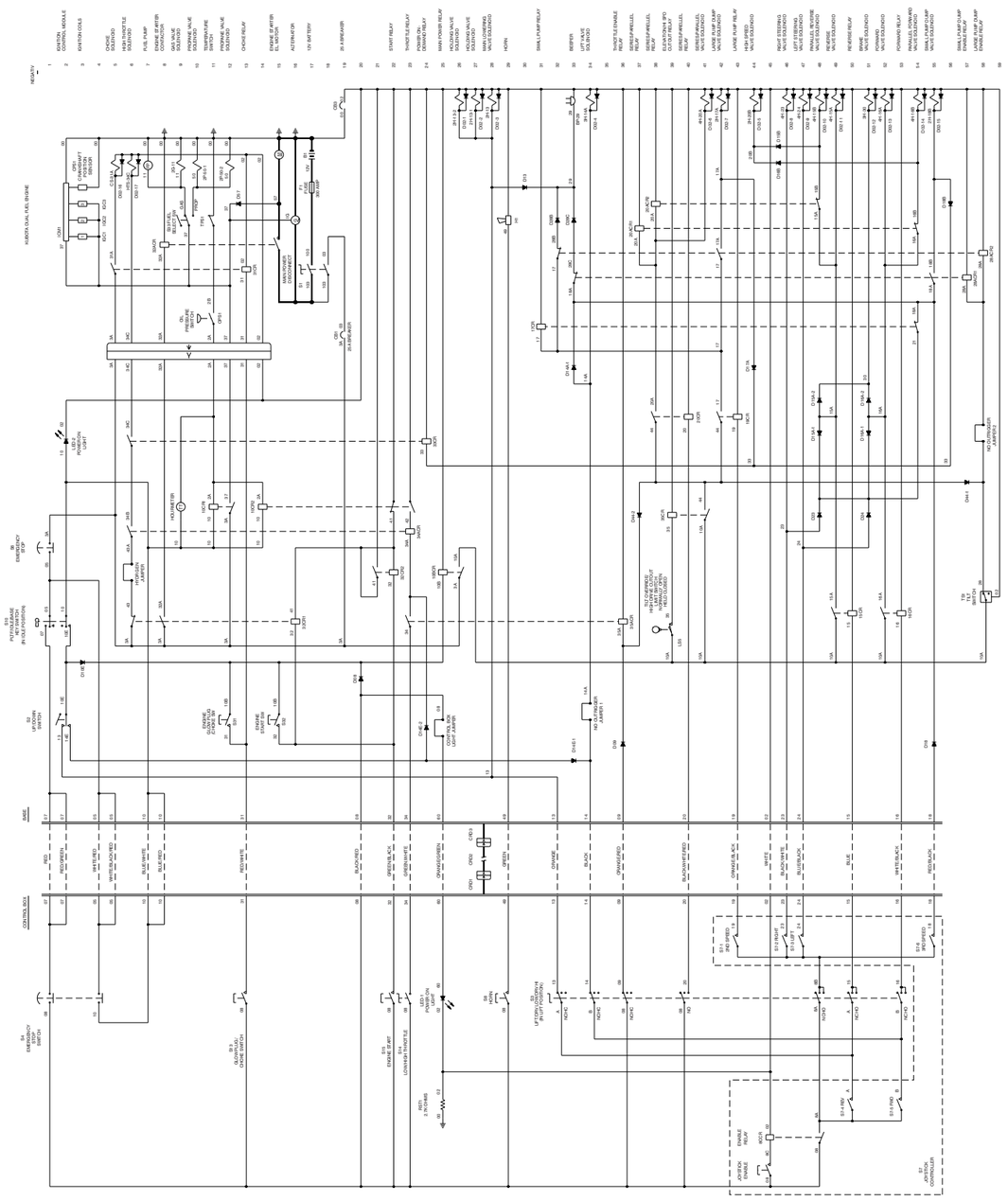


3.19. Electrical Panel Wiring Diagram (CE)



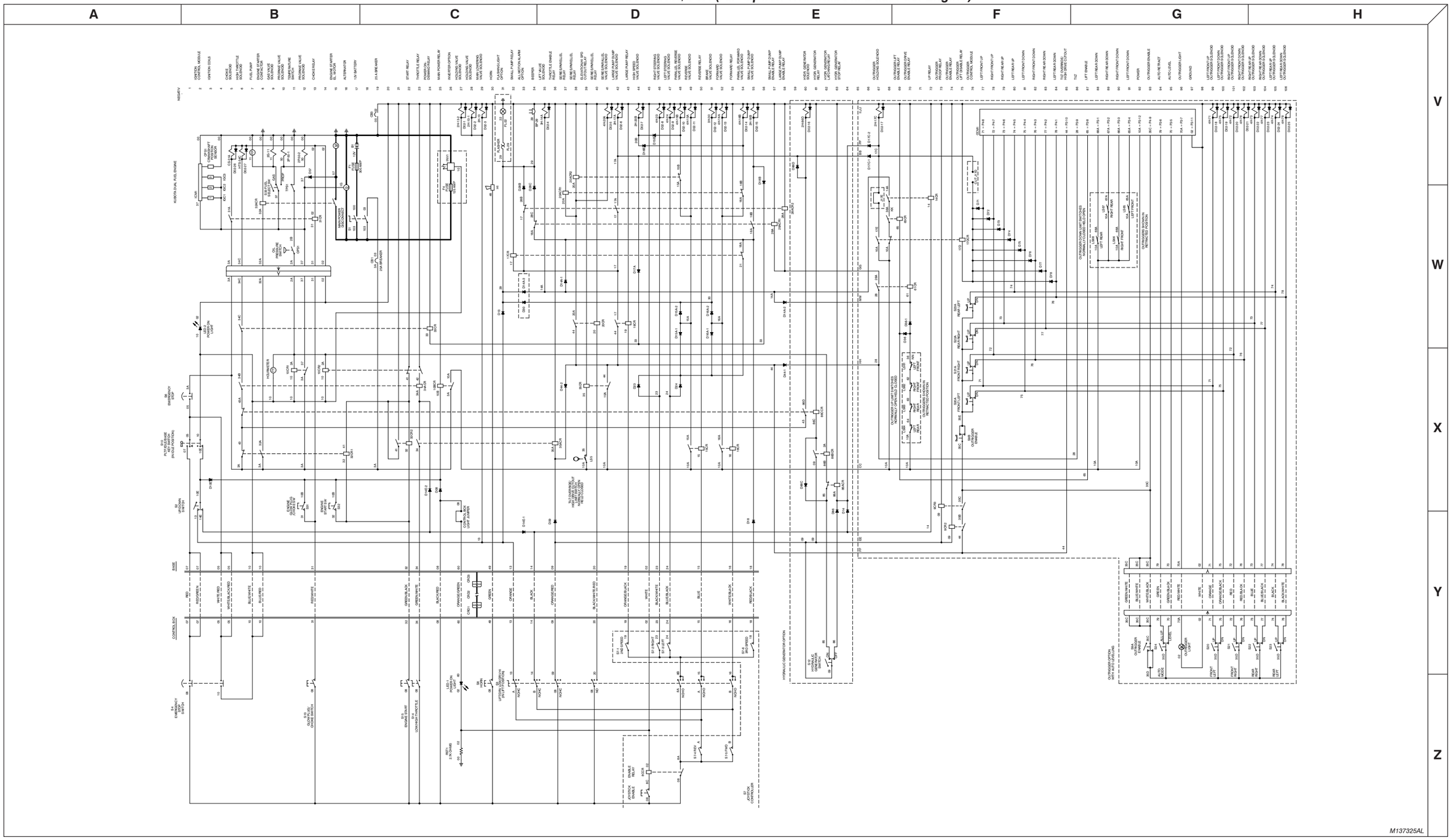
3.20. Electrical Schematic - ANSI/CSA (No Option With Kubota Dual Fuel Engine)

A	B	C	D	E	F	G	H



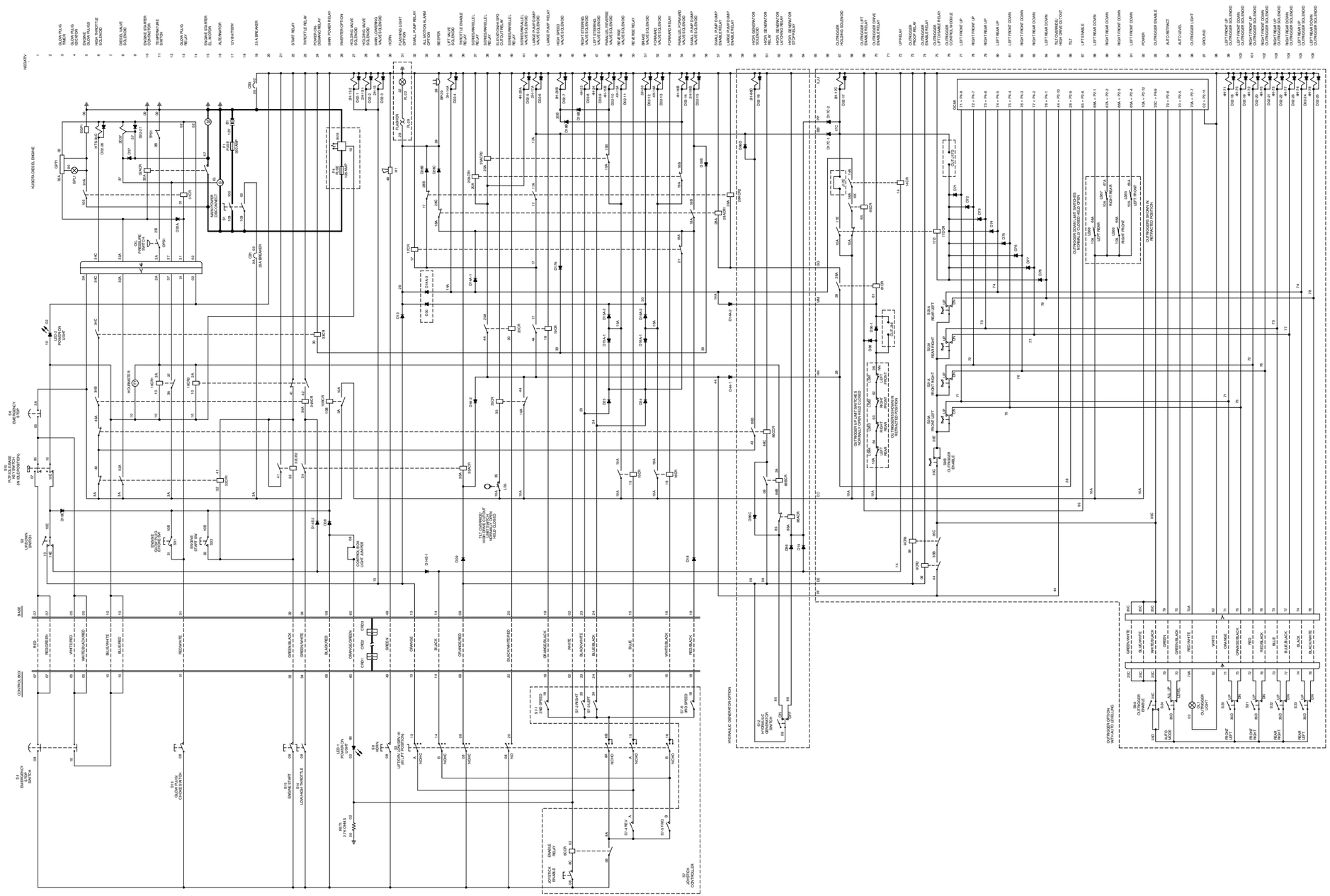
M137324AG

3.21. Electrical Schematic - ANSI/CSA (All Option With Kubota Dual Fuel Engine)



3.22a. Electrical Schematic - ANSI/CSA (All Option With Kubota Diesel Engine)

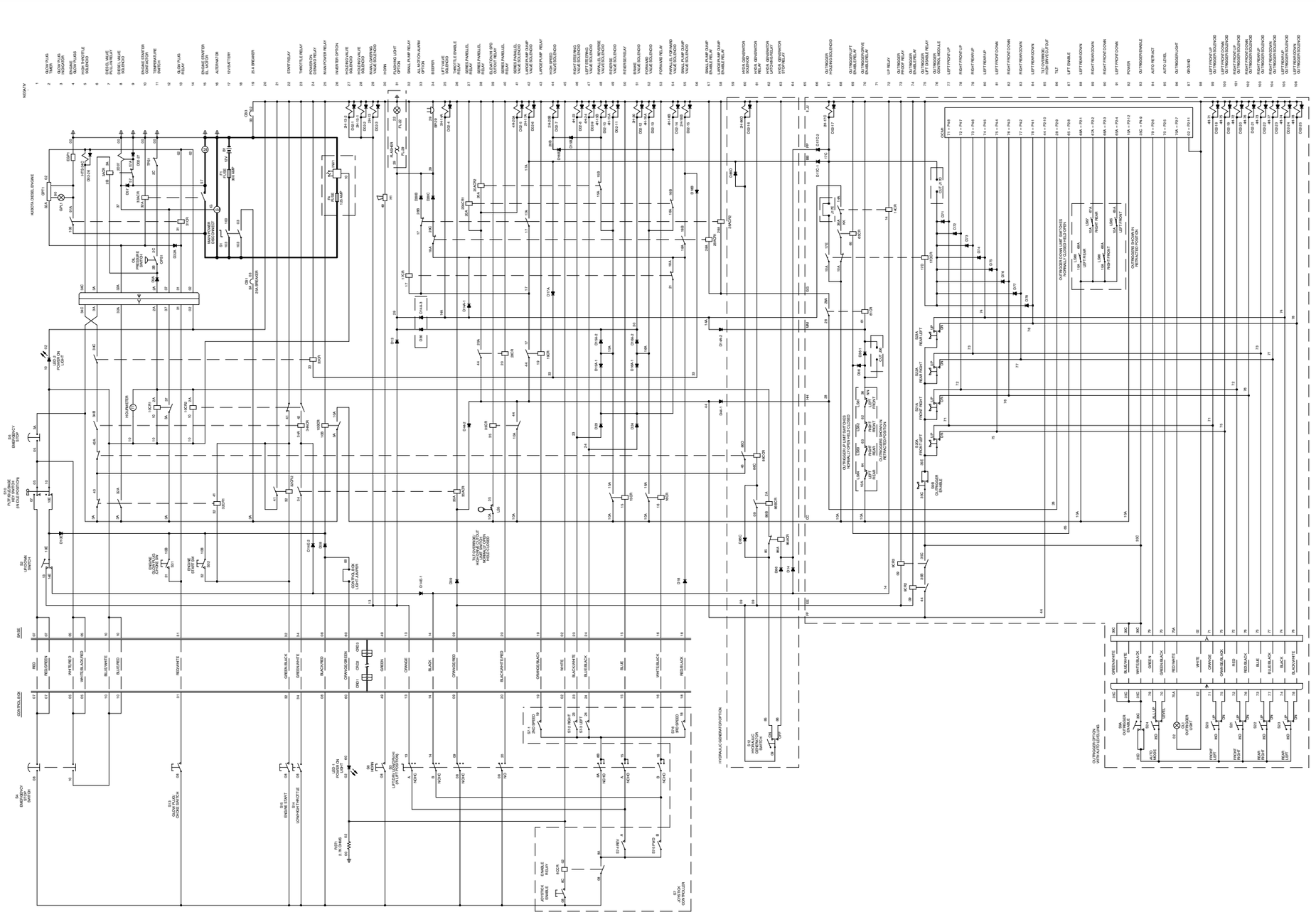
Serial Breakdown Reference Chart
Serial Number
37002423 & Below



3.22b. Electrical Schematic - ANSI/CSA (All Option With Kubota Diesel Engine)

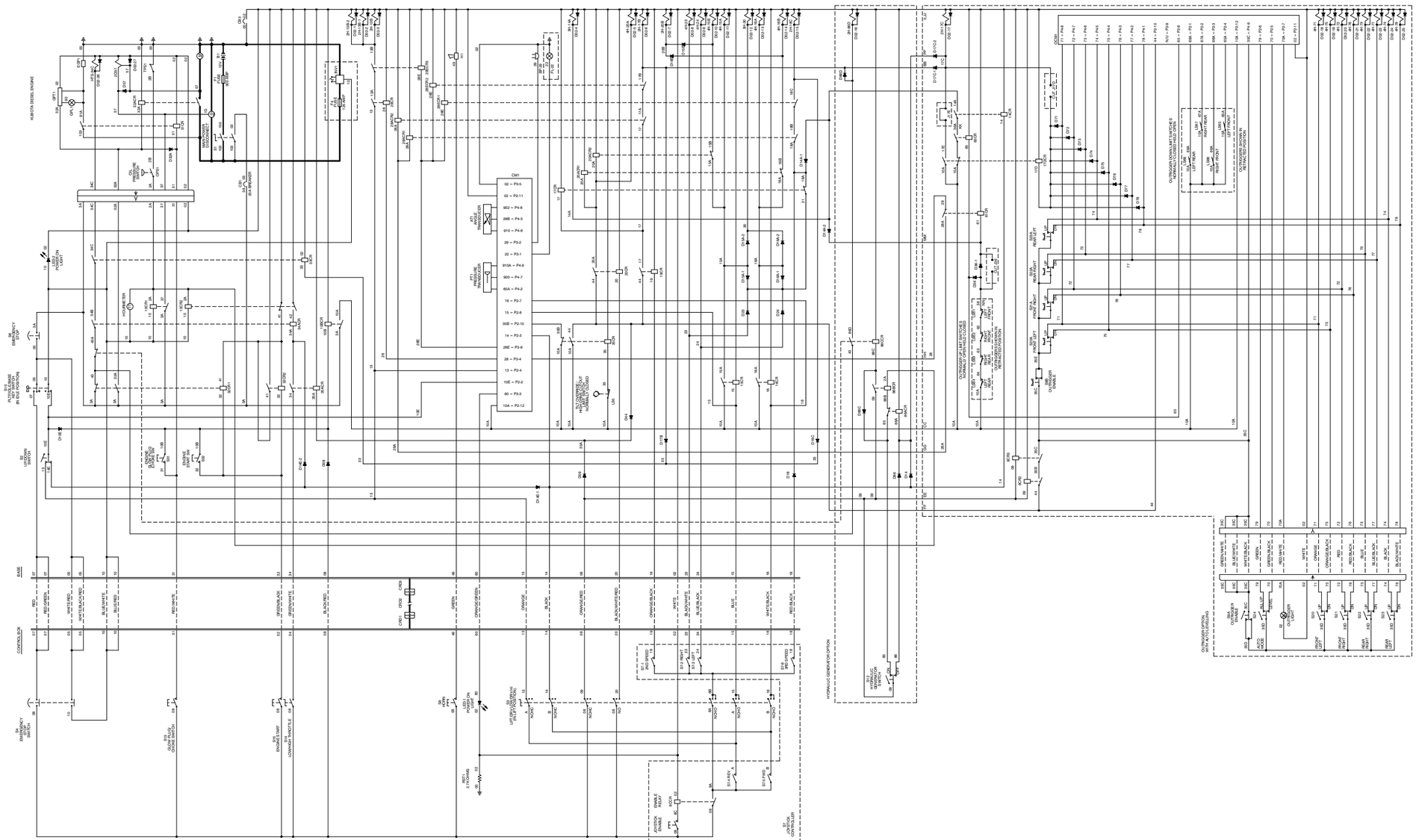
AB

Serial Breakdown Reference Chart
Serial Number
37002424 & Above



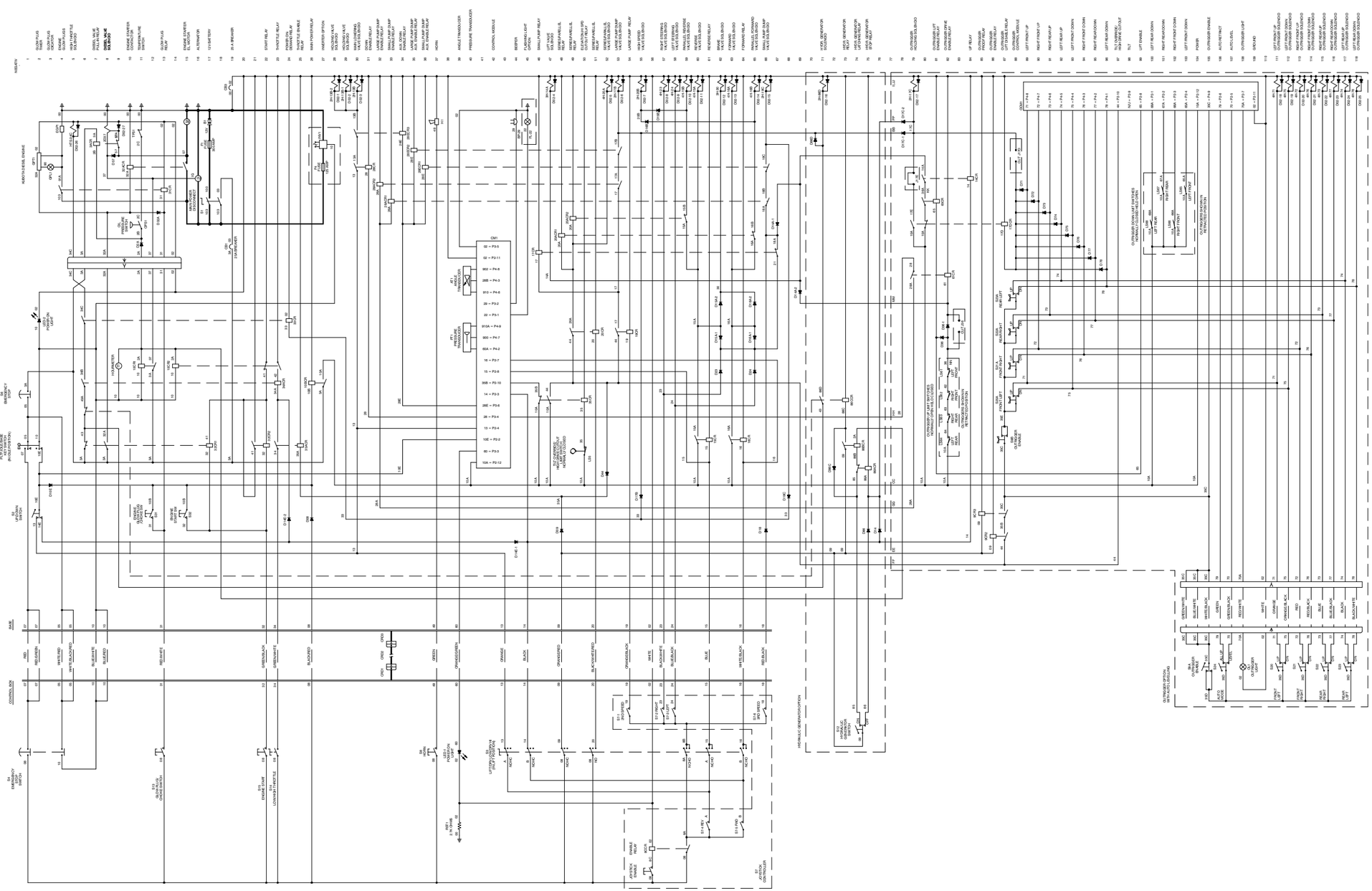
3.23a. Electrical Schematic - CE (All Option With Kubota Diesel Engine)

Serial Breakdown Reference Chart
Serial Number
37002423 & Below



3.23b. Electrical Schematic - CE (All Option With Kubota Diesel Engine)

Serial Breakdown Reference Chart
Serial Number
37002424 & Above



Section 4
TROUBLESHOOTING INFORMATION

Table of Contents

Introduction 4

Electrical System

4.1-1 All Controls Inoperative 5
4.1-2 No Power To Platform 5
4.1-3 All Functions Inoperative (Machines Equipped with Load Sensing System) (CE) 6
4.1-4 All Functions Inoperative from The Platform 6
4.1-5 Engine Will Not Crank from Platform or Base Control Console 6
4.1-6 Engine Cranks But Will Not Start - Kubota Diesel 7
4.1-7 Engine Cranks But Will Not Start - Kubota Dual Fuel 7
4.1-8 Glow Plugs Inoperative from Engine Controls or Platform (Diesel Models) 8
4.1-9 Choke Inoperative from Engine Controls or Platform (Kubota Dual Fuel) 9
4.1-10 High Throttle Inoperative 9
4.1-11 High Throttle On Demand Inoperative (Kubota Dual Fuel) 10
4.1-12 Drive and Steer Inoperative (Machines without outriggers option) 10
4.1-13 Drive and Steer Inoperative (Machines with outriggers option) 11
4.1-14 Brakes Will Not Release 12
4.1-15 Steer Right Inoperative 12
4.1-16 Steer Left Inoperative 12
4.1-17 Reverse Drive Inoperative 13
4.1-18 Forward Drive Inoperative 13
4.1-19 First Drive Speed and Steering Inoperative 14
4.1-20 Second Drive Speed Inoperative 14
4.1-21 Third Drive Speed Inoperative 16
4.1-22 High Drive Speed Inoperative 16
4.1-23 Up Circuit Inoperative from Platform 17
4.1-24 Up Circuit Inoperative from Base Control Console 17
4.1-25 Up Circuit Inoperative from Platform or Base Control Console (without Outriggers) 17
4.1-26 Platform will Not Lift from Platform or Base Control Console with Outriggers Retracted (Lift Operates Correctly with Outriggers Extended) 17
4.1-27 Platform will Not Lift from Platform or Base Control Console with Outriggers Extended 18
4.1-28 Platform will Not Lift from Platform or Base Control Console with Outriggers Extended or Retracted 19
4.1-29 Down Circuit Inoperative from Platform 19
4.1-30 Down Circuit Inoperative from Base 20
4.1-31 No Down Function (Additional for machines with Load Sensing System) (CE) 20
4.1-32 Hydraulic Generator Inoperative 21
4.1-33 Hydraulic Generator will not Shut Off from Generator Switch 21
4.1-34 All Outriggers Inoperative (Auto-Level and Manual) 22
4.1-35 All Outriggers Inoperative (Auto-Level and Manual from Platform Controls) 22
4.1-36 All Outriggers Inoperative (Base Controls only) 23
4.1-37 All Outriggers Inoperative (Auto Level only)
A: Led Power Indicator Light at Outrigger Control Module (OCM1) Not On (Constant) 23
4.1-38 All Outriggers Inoperative (Auto Level only)
B: Led Power Indicator Light at Outrigger Control Module (OCM1) Flashing 24
4.1-39 Left Front Outrigger Inoperative Manually 25
4.1-40 Right Front Outrigger Inoperative Manually 25

4

Table of Contents (Continued)

4.1-41 Right Rear Outriggers Inoperative Manually 25
4.1-42 Left Rear Outriggers Inoperative Manually 25
4.1-43 Individual Outrigger Functions Inoperative (Auto-Level) 26
4.1-44 Auto-Level Inoperative 26
4.1-45 Auto All Up Inoperative (Retract) 26

Hydraulic System

4.2-1 All Functions Inoperative 27
4.2-2 Steering Inoperative 27
4.2-3 Lift, Steer and First Drive Speed Inoperative 27
4.2-4 Second Drive Speed Inoperative 27
4.2-5 Drive Inoperative 27
4.2-6 Drive Sluggish 28
4.2-7 Reverse Drive Inoperative 28
4.2-8 Forward Drive Inoperative 28
4.2-9 Drive Inoperative When in Low Drive 28
4.2-10 Drive Inoperative When in High Drive 28
4.2-11 Brakes Will Not Release 28
4.2-12 Up Circuit Inoperative 28
4.2-13 Down Circuit Inoperative 29
4.2-14 Hydraulic Generator Inoperative 29
4.2-15 All Outriggers Inoperative 29
4.2-16 Left Front Outriggers Inoperative 29
4.2-17 Right Front Outriggers Inoperative 29
4.2-18 Right Rear Outriggers Inoperative 29
4.2-19 Left Rear Outriggers Inoperative 29
4.2-20 Outriggers Drift In 30

Load Sensing System

Load Sense System Flash Codes 31
4.3-1 Flash Code F01: Check HWFS 31
4.3-2 Flash Code F02: Not Ground Mode 31
4.3-3 Flash Code F03: Not Stopped 31
4.3-4 Flash Code F04: Tilted 31
4.3-5 Flash Code F05: Bad Height 31
4.3-6 Flash Code F06: Check Elev 31
4.3-7 Flash Code F08: Check Elev 31
4.3-8 Flash Code F09: Bad Height 31
4.3-9 Flash Code F10: Bad Height 31
4.3-10 Flash Code F11: Not Up 31
4.3-11 Flash Code F12: Too Many 32
4.3-12 Flash Code F13: Low Height Range 32
4.3-13 Flash Code F14: Bad Height 32
4.3-14 Flash Code F15: Check Elev 32
4.3-15 Flash Code F16: Low Elev.open 32
4.3-16 Flash Code F17: High Elev.open 32
4.3-17 Flash Code F18: Low Elev.close 32
4.3-18 Flash Code F19: High Elev.close 33
4.3-19 Flash Code F20: Height<>0% 33

Table of Contents (Continued)

4.3-20 Flash Code F21:Height<>0%....33
4.3-21 Flash Code F22:Height<>100%....33
4.3-22 Flash Code F23:Height<>100%....33
4.3-23 Flash Code F24:Too Many....33
4.3-24 Flash Code F25:Check Elev....33
4.3-25 Flash Code F26:Check Elev....33
4.3-26 Flash Code F27:Bad Height....32
4.3-27 Flash Code F30:Bad Heights....34
4.3-28 Flash Code F31:Reject Curve....34
4.3-29 Flash Code F32:Reject Curve....34
4.3-30 Flash Code F33:Reject Curve....34
4.3-31 Flash Code F34:Reject Curve....34
4.3-32 Flash Code F40:Reject Delta....34
4.3-33 Flash Code F42:Low Pressure....34
4.3-34 Flash Code F43:High Pressure....34
4.3-35 Flash Code F44:Low Pressure....34
4.3-36 Flash Code F45:High Pressure....35
4.3-37 Flash Code F46:Check Elev....35
4.3-38 Flash Code F47:Check Elev....35

Introduction

The following pages contain a table of Troubleshooting Information for locating and correcting most service trouble which can develop. Careful and accurate analysis of the systems listed in the table of Troubleshooting Information will localize the trouble more quickly than any other method. This manual cannot cover all possible troubles and deficiencies that may occur. If a specific trouble is not listed, isolate the major component in which the trouble occurs, isolate whether the problem is electrical or hydraulic, and then isolate and correct the specific problem.

The content of this section is separated into “probable cause” and “remedy.” The information preceded by a number represents the “probable cause.” The following line, noted by a dash represents the “remedy” to the “probable cause” directly above it. See example below for clarification.

1. Probable Cause
   - Remedy

Electrical System

4.1-1 All Controls Inoperative

1. Battery disconnected or discharged.
   - Reconnect battery. Recharge if discharged.
2. Loose or dirty battery cables.
   - Clean and tighten battery cables.
3. Defective main fuse F1 (300Amp).
   - Check fuse. Replace if defective.
4. Open or defective main power disconnect switch S1.
   - Close switch. Replace if defective.
5. Loose or broken wire #03 from main power disconnect switch S1 to circuit breaker CB1.
   - Check continuity. Replace if defective.
6. Tripped or defective circuit breaker CB1.
   - Reset breaker. Check for defective wiring. Replace breaker if defective.
7. Loose or broken wire #3A from breaker CB1 to base terminal block TB-1.
   - Check continuity. Replace if defective.
8. Loose or broken wire #3A from base terminal block TB-1 to base emergency stop switch S6.
   - Check continuity. Replace if defective.
9. Defective base emergency stop switch S6.
   - Check switch. Replace if defective.
10. Loose or broken wire #5 from base emergency stop switch S6 to base terminal block TB-1.
    - Check continuity. Replace if defective.
11. Loose or broken wire #5 from base terminal block TB-1 to key switch S10.
    - Check continuity. Replace if defective.
12. Defective key switch S10.
    - Check switch. Replace if defective.
13. Loose or broken wire #7 from key switch S10 to base terminal block TB-1.
    - Check continuity. Replace if defective.
14. Loose or broken wire #7 from base terminal block TB-1 to platform emergency stop switch S4.
    - Check continuity. Replace if defective.
15. Defective platform emergency stop switch S4.
    - Check switch. Replace if defective.
16. Loose or broken wire #10 from platform emergency stop switch S4 to base terminal block TB-1.
    - Check continuity. Replace if defective.
17. Loose or broken wire #10 from base terminal block TB-1 to key switch S10.
    - Check continuity. Replace if defective.
18. Defective key switch S10.
    - Check switch. Replace if defective.

4.1-2 No Power To Platform

1. Open or defective key switch S10.
   - Check switch. Replace if defective.
2. Loose or broken wire #07 from key switch S10 to base terminal block TB-1.
   - Check continuity. Replace if defective.
3. Loose or broken wire #07 from base terminal block TB-1 to platform emergency stop switch S4.
   - Check continuity. Replace if defective.
4. Open or defective platform emergency stop switch S4.
   - Check switch. Replace if defective.

Electrical System (Continued)

4.1-3 All Functions Inoperative (Machines Equipped with Load Sensing System) (CE)

1. Loose or broken wire #10A from base terminal block TB1 to control module CM1 at pin #P2-12.
   - Check for 12 Volts at P2-12. If no voltage present, check wire continuity. Replace if defective.
2. Loose or broken wire #02 from control module CM1 at pin #P2-11 to base terminal block TB1.
   - Check continuity. Replace if defective.
3. Loose or broken wire #28E from control module CM1 at pin #P3-6 to 28ECR1 small pump dump auxiliary enable relay and 28ECR2 large pump dump auxiliary enable relay and 28ECR3 auxiliary down enable relay.
   - Check for 12 Volts at P3-6. If voltage present, check for 12 Volts at wire #28E at 28ECR1, 28ECR2 and 28ECR3 relays. If voltage present, check operation of relays. If no voltage present, check wire continuity. Replace if defective.
4. Defective pressure transducer PT1 or angle transducer AT1 or related wiring.
   - Refer to transducer troubleshooting charts.

4.1-4 All Functions Inoperative from The Platform

1. Open or defective emergency stop switch S4.
   - Check switch. Replace if defective.
2. Loose or broken wire #08 from platform emergency stop switch S4 to base terminal block TB-1.
   - Check continuity. Replace if defective.
3. Open diode D08 at base terminal block TB-1.
   - Check diode. Replace if defective.

4.1-5 Engine Will Not Crank from Platform or Base Control Console

1. Loose or broken wire #8 from horn switch S8 to start switch S15 (Platform only).
   - Check continuity. Replace if defective.
2. Defective start switch S15 (Platform only).
   - Check switch. Replace if defective.
3. Loose or broken wire #32 from start switch S15 to base start switch S32 (Platform only).
   - Check continuity. Replace if defective.
4. Loose or broken wire #10E from key switch S10 to base terminal block TB-1 (Base only).
   - Check continuity. Replace if defective.
5. Defective key switch S10 (Base only).
   - Check switch. Replace if defective.
6. Open or defective diode D10E (Base only).
   - Check diode. Replace if defective.
7. Loose or broken wire #10B from base terminal block TB-1 to base choke/ glow plug switch S31(Base only).
   - Check continuity. Replace if defective.
8. Loose or broken wire #10B from base choke/ glow plug switch S31 to base start switch S32 (Base only).
   - Check continuity. Replace if defective.
9. Defective base start switch S32 (Base only).
   - Check switch. Replace if defective.
10. Loose or broken wire #32 from base start switch S32 to relay 32CR2.
    - Check continuity. Replace if defective.
11. Defective relay 32CR2.
    - Check relay. Replace if defective.
12. Loose or broken jumper wire #41 on relay 32CR2.
    - Check continuity. Replace if defective.

Electrical System (Continued)

13. Loose or broken wire #02 from relay 32CR2 to base terminal block TB-1.
    - Check continuity. Replace if defective.
14. Ground not getting through N/C set of contacts on relay 10CR2 to relay 32CR2.
    - Check continuity through contacts. Replace if defective.
15. Loose or broken wire #3A from relay 10BC2 to relay 32CR1.
    - Check continuity. Replace if defective.
16. Loose or broken wire #32A from relay 32CR1 to engine harness.
    - Check continuity. Replace if defective.
17. Loose or broken wire #32 from relay 32CR2 to relay 32CR1.
    - Check continuity. Replace if defective.
18. Loose or broken wire #41 from relay 32CR2 to relay 32CR1.
    - Check continuity. Replace if defective.
19. Defective relay 32CR1.
    - Check relay. Replace if defective.
20. Loose or broken wire #32A from engine harness to starter contactor 32ACR.
    - Check continuity. Replace if defective.
21. Defective starter contactor 32ACR.
    - Check contactor. Replace if defective.
22. Loose or broken wire #00 from starter contactor 32ACR to base terminal block TB-1.
    - Check continuity. Replace if defective.
23. Loose or broken wire #103 from main power disconnect S1 to starter contactor 32ACR.
    - Check continuity. Replace if defective.
24. Loose or broken wire #57 from starter contactor 32ACR to starter motor.
    - Check continuity. Replace if defective.
25. Defective starter motor.
    - Check motor. Repair or replace if defective.

4.1-6 Engine Cranks But Will Not Start - Kubota Diesel

1. Open diode D32A from engine start switch S32 to glow plug switch S31. (Diode located in Engine harness. Refer to Engine wiring diagram- Diesel Fuel System)
    - Check diode. Replace if defective.
2. Loose or broken wire #37 from engine harness to diesel valve solenoid 2D37.
    - Check continuity. Replace if defective.
3. Loose or broken wire #57 from starter contactor 32ACR to diesel valve solenoid 2D37.
    - Check continuity. Replace if defective.
4. Defective fuel valve solenoid 2D37.
    - Check solenoid. Replace if defective.
5. Defective glow plugs.
    - Check glow plugs. Repair if necessary.
6. Defective glow plug timer GPT1.
    - Check timer. Replace if defective.
7. Defective glow plug relay 31CR.
    - Check relay. Replace if defective.

4.1-7 Engine Cranks But Will Not Start - Kubota Dual Fuel

1. Open or defective diode D57. (Diode located in Engine harness. Refer to Engine wiring diagram- Dual Fuel System)
    - Check diode. Replace if defective.
2. Loose or broken wire #37 from engine harness plug to coil pack 2 wire connector.
    - Check continuity. Replace if defective.

Electrical System (Continued)

3. Loose or broken wire #00 from coil pack 2 wire connector to engine ground.
   - Check continuity. Replace if defective.
4. Loose or broken wire #00 from engine ground to crank position sensor.
   - Check continuity. Replace if defective.
5. Loose or broken wire #37 from ignition control module ICM1 to crank position sensor CPS1.
   - Check continuity. Replace if defective.
6. Defective ignition control module ICM1.
   - Refer to section 5 of this manual for Ohm specifications. Replace if defective.
7. Defective crank position sensor CPS1.
   - Refer to section 5 of this manual for Ohm specifications. Replace if defective.
8. Loose or broken wire #37 from engine harness plug to fuel select switch S33.
   - Check continuity. Replace if defective.
9. Defective fuel switch S33.
   - Check switch. Replace if defective.
10. While in gasoline, loose or broken wire #11 from fuel select switch S33 to fuel pump FP11 or gas valve 2G-11.
    - Check continuity. Replace if defective.
11. While in propane, loose or broken wire #50 from fuel select switch S33 to fuel lockoff 2P-50-1 or propane lockoff 2P-50-2.
    - Check continuity. Replace if defective.
12. Loose or broken wire #00 from engine ground to propane lockoff 2P-50-1 or 2P-50-2 (propane) or to gasoline 2G-11 or fuel pump FP11 (gasoline).
    - Check continuity. Replace if defective.
13. Defective propane lockoff 2P-50-1 or 2P-50-2 (propane) or gas valve 2G-11 or fuel pump FP11 (gasoline).
    - Check lockoffs, valve or pump. Replace if defective.

4.1-8 Glow Plugs Inoperative from Engine Controls or Platform (Diesel Models)

1. Loose or broken wire #8 from start switch S15 to glow plug switch S13 (Platform only).
   - Check continuity. Replace if defective.
2. Defective glow plug switch S13 (Platform only).
   - Check switch. Replace if defective.
3. Loose or broken wire #31 from glow plug switch S13 to base glow plug switch S31 (Platform only).
   - Check continuity. Replace if defective.
4. Loose or broken wire #10B from base terminal block TB-1 to base glow plug switch S31 (Base only).
   - Check continuity. Replace if defective.
5. Defective base glow plug switch S31 (Base only).
   - Check switch. Replace if defective.
6. Loose or broken wire #31 from glow plug switch S31 to glow plug relay 31CR.
   - Check continuity. Replace if defective.
7. Loose or broken wire #02 from glow plug relay 31CR to base terminal block TB1.
   - Check continuity. Replace if defective.
8. Loose or broken wire #103 from engine starter to relay 31CR.
   - Check continuity. Replace if defective.
9. Loose or broken wire #91A from relay 31CR to engine glow plugs EGP1.
   - Check continuity. Replace if defective.
10. Defective glow plug relay 31CR.
    - Check relay. Replace if defective.
11. Defective glow plugs.
    - Check glow plugs. Replace if defective.

Electrical System (Continued)

4.1-9 Choke Inoperative from Engine Controls or Platform (Kubota Dual Fuel)

1. Loose or broken wire #8 from start switch S15 to choke switch S13 (Platform only).
   - Check continuity. Replace if defective.
2. Defective choke switch S13 (Platform only).
   - Check switch. Replace if defective.
3. Loose or broken wire #31 from choke switch S13 to base choke switch S31 (Platform only).
   - Check continuity. Replace if defective.
4. Loose or broken wire #10B from base terminal block TB-1 to base choke switch S31 (Base only).
   - Check continuity. Replace if defective.
5. Defective base choke switch S31 (Base only).
   - Check switch. Replace if defective.
6. Loose or broken wire #31 from base choke switch S31 to engine harness.
   - Check continuity. Replace if defective.
7. Loose or broken wire #31 from engine harness to relay 31CR.
   - Check continuity. Replace if defective.
8. Loose or broken wire #02 from engine harness to relay 31CR.
   - Check continuity. Replace if defective.
9. Loose or broken wire #3A from engine harness to relay 31CR.
   - Check continuity. Replace if defective.
10. Defective relay 31CR.
    - Check relay. Replace if defective.
11. Loose or broken wire #31A from relay 31CR to choke solenoid CS-31A.
    - Check continuity. Replace if defective.
12. Loose or broken wire #02 from engine harness to choke solenoid CS-31A.
    - Check continuity. Replace if defective.
13. Defective choke solenoid CS-31A.
    - Check solenoid. Replace if defective.

4.1-10 High Throttle Inoperative

NOTE

If machine is in drive mode and is elevated above high speed limit switch, high throttle is inoperative.

1. Loose or broken wire #08 from lift/drive select switch S3 to low/high throttle switch S14.
   - Check continuity. Replace if defective.
2. Defective low/high throttle switch S14.
   - Check switch. Replace if defective.
3. Loose or broken wire #34 from low/high throttle switch S14 to relay 35ACR.
   - Check continuity. Replace if defective.
4. Open diode D09 (when in lift only).
   - Check diode. Replace if defective.
5. Open diode D44-2 (when in drive only).
   - Check diode. Replace if defective.
6. Loose or broken wire #35A from base terminal block TB-1 to relay 35ACR.
   - Check continuity. Replace if defective.
7. Defective relay 35ACR.
   - Check relay. Replace if defective.
8. Loose or broken wire #02 from relay 35ACR to terminal block TB1.
   - Check continuity. Replace if defective.

Electrical System (Continued)

9. Loose or broken wire #34A from relay 35ACR to relay 34ACR.
   - Check continuity. Replace if defective.
10. Defective relay 34ACR.
   - Check relay. Replace if defective.
11. Loose or broken wire #42 from relay 34ACR to relay 10CR2.
   - Check continuity. Replace if defective.
12. Defective relay 10CR2.
   - Check relay. Replace if defective.
13. Loose or broken wire #2A from relay 10CR2 to relay 10CR1.
   - Check continuity. Replace if defective.
14. Loose or broken wire #3A from base terminal block TB1 to relay 32CR1.
   - Check continuity. Replace if defective.
15. Defective relay 32CR1.
   - Check relay. Replace if defective.
16. Loose or broken wire #43 from relay 32CR1 to relay 34ACR.
   - Check continuity. Replace if defective.
17. Loose or broken wire #34B from relay 34ACR to relay 33CR.
   - Check continuity. Replace if defective.

4.1-11 High Throttle On Demand Inoperative (Kubota Dual Fuel)

NOTE

If machine is in drive mode and is elevated above high speed limit switch, high throttle is inoperative.

1. Throttle switch S14 in low throttle position.
   - Select high throttle position on switch.
2. Open or defective diode D17A or D18B.
   - Check diodes. Replace if defective.
3. Loose or broken wire #33 from terminal block TB1 to power on demand relay 33CR.
   - Check continuity. Replace if defective.
4. Loose or broken wire #02 from terminal block TB1 to power on demand relay 33CR.
   - Check continuity. Replace if defective.
5. Defective power on demand relay 33CR.
   - Check relay. Replace if defective.
6. Loose or broken wire #34C from power on demand relay 33CR to high throttle solenoid HTS-34C.
   - Check continuity. Replace if defective.
7. Defective high throttle solenoid HTS-34C.
   - Check solenoid. Replace if defective.

NOTE

If the above does not repair the high throttle on demand, refer to high throttle inoperative in this section.

4.1-12 Drive and Steer Inoperative (Machines without outriggers option)

1. Lift/Drive select switch S3 in lift position.
   - Turn switch to Drive position.
2. Defective contacts on lift/drive select switch between wire #8A and wire #8B.
   - Check continuity through contact. Replace if defective.

Electrical System (Continued)

3. Loose or broken wire #08 from Lift/Drive select switch S3 to controller enable switch S7-7.
   - Check continuity. Replace if defective.
4. Defective controller enable switch S7-7.
   - Check switch. Replace if defective.
5. Loose or broken wire #8A from controller enable relay 8CCR to speed, steer and direction switches S7-1 to S7-6.
   - Check continuity. Replace if defective.
6. Loose or broken wire #8C from controller enable switch S7-7 to controller enable relay 8CCR.
   - Check continuity. Replace if defective.
7. Defective controller enable relay 8CCR.
   - Check continuity. Replace if defective.
8. Loose or broken wire #02 from controller enable relay 8CCR to controller harness.
   - Check continuity. Replace if defective.
9. Loose or broken wire #10A from base terminal block to tilt switch TS1.
   - Check continuity. Replace if defective.
10. Defective tilt switch TS1.
    - Check tilt switch. Replace if defective.
11. Loose or broken wire #28 from tilt switch TS1 to terminal block TB1.
    - Check continuity. Replace if defective.
12. Loose or broken wire #28 from base terminal TB1 to outrigger connector CN14 at pin #7.
    - Check continuity. Replace if defective.
13. Loose or broken jumper wire from #28 to # 28A on outrigger connector CN14 between pin #1 and pin #7.
    - Check continuity. Replace if defective.
14. Loose or broken wire #28A from outrigger connector CN14 at pin #1 to base terminal block TB1.
    - Check continuity. Replace if defective.

4.1-13 Drive and Steer Inoperative (Machines with outriggers option)

1. Outriggers not fully retracted
   - Fully retract outrigger cylinders
2. Lift/Drive select switch S3 in lift position.
   - Turn switch to Drive position.
3. Defective contacts on lift/drive select switch between wire #8A and wire #8B.
   - Check continuity through contact. Replace if defective.
4. Loose or broken wire #08 from lift/drive select switch S3 to controller enable switch S7-7.
   - Check continuity. Replace if defective.
5. Defective controller enable switch S7-7.
   - Check switch. Replace if defective.
6. Loose or broken wire #8A from controller enable relay 8CCR to speed, steer and direction switches S7-1 to S7-6.
   - Check continuity. Replace if defective.
7. Loose or broken wire #8C from controller enable switch S7-7 to controller enable relay 8CCR.
   - Check continuity. Replace if defective.
8. Defective controller enable relay 8CCR.
   - Check continuity. Replace if defective.
9. Loose or broken wire #02 from controller enable relay 8CCR to controller harness.
   - Check continuity. Replace if defective.

Electrical System (Continued)

10. Loose or broken wire #10A from base terminal block TB1 to outrigger control module OCM1 at pin #p2-12.
    - Check continuity. Replace if defective.
11. Loose or broken wire #28 from outrigger control module OCM1 at pin #P2-9 to outrigger connector CN14 at pin #7.
    - Check continuity. Replace if defective.
12. Left rear outrigger limit switch LS64 is out of adjustment or defective.
    - Check continuity through switch. Adjust switch if out of adjustment. Replace if defective.
13. Right rear outrigger limit switch LS63 is out of adjustment or defective.
    - Check continuity through switch. Adjust switch if out of adjustment. Replace if defective.
14. Right front outrigger limit switch LS62 is out of adjustment or defective.
    - Check continuity through switch. Adjust switch if out of adjustment. Replace if defective.
15. Left front outrigger limit switch LS61 is out of adjustment or defective.
    - Check continuity through switch. Adjust switch if out of adjustment. Replace if defective.
16. Defective drive enable relay 61CR.
    - Check relay. Replace if defective.
17. Loose or broken wire #28A from pin #1 on connector CN14 at the outrigger board to terminal block TB1.
    - Check continuity. Replace if defective.

4.1-14 Brakes Will Not Release

1. Loose or broken wire #30 from base terminal block TB1 to brake valve coil 3H-30.
    - Check continuity. Replace if defective.
2. Defective brake valve coil 3H-30.
    - Check continuity through coil. Replace if defective.
3. Loose or broken wire #02 from brake valve 3H-30 to base terminal block TB1.
    - Check continuity. Replace if defective.

4.1-15 Steer Right Inoperative

1. Defective steer right switch S7-2 in controller S7.
    - Check switch. Replace if defective.
2. Loose or broken wire #23 from steer right switch S7-2 to base terminal block TB1.
    - Check continuity. Replace if defective.
3. Loose or broken wire #23 from base terminal block TB1 to steer right valve coil 4H-23.
    - Check continuity. Replace if defective.
4. Defective steer right valve coil 4H-23.
    - Check coil. Replace if defective.
5. Loose or broken wire #02 from steer right valve coil 4H-23 to base terminal block TB1.
    - Check continuity. Replace if defective.
6. Open diode D23.
    - Check diode. Replace if defective.

4.1-16 Steer Left Inoperative

1. Defective steer left switch S7-3 in controller S7.
    - Check switch. Replace if defective.
2. Loose or broken wire #24 from steer left switch S7-3 to base terminal block TB1.
    - Check continuity. Replace if defective.
3. Loose or broken wire #24 from base terminal block TB1 to steer left valve coil 4H-24.
    - Check continuity. Replace if defective.

Electrical System (Continued)

4. Defective steer left valve coil 4H-24.
   - Check coil. Replace if defective.
5. Loose or broken wire #02 from steer left valve coil 4H-24 to base terminal block TB1.
   - Check continuity. Replace if defective.
6. Open diode D24.
   - Check diode. Replace if defective.

4.1-17 Reverse Drive Inoperative

1. Defective reverse switch S7-4 in controller S7.
   - Check switch. Replace if defective.
2. Defective controller S7.
   - Check controller. Replace if defective.
3. Loose or broken wire #A from reverse switch S7-4 to contacts on Lift/Drive select switch between wire #A and wire #15.
   - Check continuity. Replace if defective.
4. Loose or broken wire #15 from Lift/Drive select switch to relay 15CR.
   - Check continuity. Replace if defective.
5. Defective relay 15CR.
   - Check relay. Replace if defective.
6. Loose or broken wire #02 from relay 15CR to base terminal block.
   - Check continuity. Replace if defective.
7. Loose or broken wire #10A from base terminal block to relay 15CR.
   - Check continuity. Replace if defective.
8. Loose or broken wire #15A from relay 15CR to reverse valve coil 4H-15A.
   - Check continuity. Replace if defective.
9. Loose or broken wire #02 from reverse valve coil to base terminal block TB1.
   - Check continuity. Replace if defective.
10. Loose or broken wire #15A from base terminal block TB1 to relay 20ACR2 (In parallel drive only).
    - Check continuity. Replace if defective.
11. Defective relay 20ACR2 (in parallel drive only).
    - Check relay. Replace if defective.
12. Loose or broken wire #15B from relay 20ACR2 to parallel reverse valve coil 4H-15B (in parallel drive only).
    - Check continuity. Replace if defective.
13. Loose or broken wire #02 from base terminal block TB1 to parallel reverse valve coil 4H-15B (in parallel drive only).
    - Check continuity. Replace if defective.
14. Defective parallel reverse valve coil 4H-15B (in parallel drive only).
    - Check coil. Replace if defective.
15. Open diode D15A-1 or D15A-2.
    - Check diodes. Replace if defective.

4.1-18 Forward Drive Inoperative

1. Defective forward switch S7-5 in controller S7.
   - Check switch. Replace if defective.
2. Defective controller S7.
   - Check controller. Replace if defective.
3. Loose or broken wire #B from forward switch S7-5 to contacts on lift/drive select switch between wire #B and wire #16.
   - Check continuity. Replace if defective.

Electrical System (Continued)

4. Loose or broken wire #16 from lift/drive select switch to relay 16CR.
   - Check continuity. Replace if defective.
5. Defective relay 16CR.
   - Check relay. Replace if defective.
6. Loose or broken wire #02 from relay 16CR to base terminal block.
   - Check continuity. Replace if defective.
7. Loose or broken wire #10A from base terminal block to relay 16CR.
   - Check continuity. Replace if defective.
8. Loose or broken wire #16A from relay 16CR to forward valve coil 4H-16A.
   - Check continuity. Replace if defective.
9. Loose or broken wire #02 from forward valve coil to base terminal block TB1.
   - Check continuity. Replace if defective.
10. Loose or broken wire #16A from base terminal block TB1 to relay 20ACR1 (in parallel drive only).
    - Check continuity. Replace if defective.
11. Defective relay 20ACR1 (in parallel drive only).
    - Check relay. Replace if defective.
12. Loose or broken wire #16B from relay 20ACR1 to parallel forward valve coil 4H-16B (in parallel drive only).
    - Check continuity. Replace if defective.
13. Loose or broken wire #02 from base terminal block TB1 to parallel forward valve coil 4H-16B (in parallel drive only).
    - Check continuity. Replace if defective.
14. Defective parallel forward valve coil 4H-16B (in parallel drive only).
    - Check coil. Replace if defective.
15. Open diode D16A-1 or D16A-2.
    - Check diodes. Replace if defective.

4.1-19 First Drive Speed and Steering Inoperative

1. Loose or broken wire #21 from base terminal block TB1 to relay 17CR.
   - Check continuity. Replace if defective.
2. Defective relay 17CR.
   - Check relay. Replace if defective.
3. Loose or broken wire #18A from relay 17CR to base terminal block TB1.
   - Check continuity. Replace if defective.
4. Loose or broken wire #18A from base terminal block TB1 to relay 28ACR1.
   - Check continuity. Replace if defective.
5. Defective relay 28ACR1.
   - Check relay. Replace if defective.
6. Loose or broken wire #18B from relay 28ACR1 to base terminal block TB1.
   - Check continuity. Replace if defective.
7. Loose or broken wire #18B from base terminal block TB1 to small pump dump valve coil 2H-18B.
   - Check continuity. Replace if defective.
8. Defective small pump dump valve coil 2H-18B.
   - Check coil. Replace if defective.
9. Loose or broken wire #02 from small pump dump coil 2H-18B to base terminal block TB1.
   - Check continuity. Replace if defective.

4.1-20 Second Drive Speed Inoperative

1. Defective second speed switch S7-1 in controller S7.
   - Check switch. Replace if defective.

Electrical System (Continued)

2. Defective controller S7.
   - Check controller. Replace if defective.
3. Loose or broken wire #19 from controller S7-1 to relay 19CR.
   - Check continuity. Replace if defective.
4. Loose or broken wire #02 from platform terminal block TB1 to relay 19CR.
   - Check continuity. Replace if defective.
5. Defective relay 19CR.
   - Check relay. Replace if defective.
6. Loose or broken wire #10A from base terminal block to high drive/tilt override limit switch LS5.
   - Check continuity. Replace if defective.
7. Misadjusted or defective high drive/tilt override limit switch LS5.
   - Adjust switch. Replace if defective.
8. Loose or broken wire #35 from high drive/tilt override limit switch LS5 to relay 35CR.
   - Check continuity. Replace if defective.
9. Loose or broken wire #02 from relay 35CR to base terminal block.
   - Check continuity. Replace if defective.
10. Defective relay 35CR.
    - Check relay. Replace if defective.
11. Loose or broken wire #10A from base terminal block TB1 to relay 35CR.
    - Check continuity. Replace if defective.
12. Loose or broken wire #44 from relay 35CR to base terminal block TB1.
    - Check continuity. Replace if defective.
13. Loose or broken wire #44 from base terminal block TB1 to relay 19CR.
    - Check continuity. Replace if defective.
14. Loose or broken wire #17 from relay 19CR to relay 17CR.
    - Check continuity. Replace if defective.
15. Defective relay 17CR.
    - Check relay. Replace if defective.
16. Loose or broken wire #02 from relay 17CR to base terminal block TB1.
    - Check continuity. Replace if defective.
17. Loose or broken wire #17 from relay 17CR to relay 28ACR2.
    - Check continuity. Replace if defective.
18. Loose or broken wire #17A from relay 28ACR2 to base terminal block TB1. (ANSI/CSA)
    - Check continuity. Replace if defective.
19. Defective relay 28ACR2.
    - Check relay. Replace if defective.
20. Loose or broken wire #17A from relay 28ACR2 to relay 28ECR2. (CE)
    - Check continuity. Replace if defective.
21. Defective relay 28ECR2. (CE)
    - Check relay. Replace if defective.
22. Loose or broken wire #17B from relay 28ECR2 to base terminal block TB1. (CE)
    - Check continuity. Replace if defective.
23. Loose or broken wire #17A from base terminal block TB1 to large pump dump valve coil 2H-17A. (ANSI/CSA)
    - Check continuity. Replace if defective.
24. Loose or broken wire #17B from base terminal block TB1 to large pump dump valve coil 2H-17B. (CE)
    - Check continuity. Replace if defective.

Electrical System (Continued)

25. Loose or broken wire #02 from large pump dump valve coil 2H-17A (ANSI/CSA) or 2H-17B (CE) to base terminal block TB1.
    - Check continuity. Replace if defective.
26. Defective large pump dump valve coil 2H-17A (ANSI/CSA) or 2H-17B (CE).
    - Check coil. Replace if defective.

4.1-21 Third Drive Speed Inoperative

1. Defective third speed switch S7-6 in controller S7.
    - Check switch. Replace if defective.
2. Defective controller S7.
    - Check controller. Replace if defective.
3. Loose or broken wire #18 from third speed switch S7-6 to diode D18 at base terminal block TB1.
    - Check continuity. Replace if defective.
4. Defective diode D18.
    - Check diode. Replace if defective.

4.1-22 High Drive Speed Inoperative

1. Lift/Drive select switch S3 in low drive position.
    - Select high drive position on lift/drive select switch.
2. Defective contacts on lift/drive select switch S3 between wire #08 and wire #20.
    - Check continuity through contact. Replace if defective.
3. Loose or broken wire #20 from lift/drive select switch S3 to relay 20CR.
    - Check continuity. Replace if defective.
4. Loose or broken wire #02 from relay 20CR to base terminal block TB1.
    - Check continuity. Replace if defective.
5. Defective relay 20CR.
    - Check relay. Replace if defective.
6. Loose or broken wire #44 from base terminal block TB1 to relay 20CR.
    - Check continuity. Replace if defective.
7. Loose or broken wire #20A from relay 20CR to relay 20ACR1.
    - Check continuity. Replace if defective.
8. Loose or broken wire #20A from relay 20ACR1 to series/parallel valve coil 4H-20A.
    - Check continuity. Replace if defective.
9. Loose or broken wire #02 from series/parallel valve coil 4H-20A to base terminal block TB1.
    - Check continuity. Replace if defective.

10 Defective series/parallel valve coil 4H-20A.
    - Check coil. Replace if defective.

11. Loose or broken wire #02 from relay 20ACR1 to base terminal block TB1 (forward drive only).
    - Check continuity. Replace if defective.
12. Defective relay 20ACR1 (forward drive only).
    - Check relay. Replace if defective.
13. Loose or broken wire #20A from relay 20CR to relay 20ACR2 (reverse drive only).
    - Check continuity. Replace if defective.
14. Loose or broken wire #02 from relay 20ACR2 to base terminal block TB1 (reverse drive only).
    - Check continuity. Replace if defective.
15. Defective relay 20ACR2 (reverse drive only).
    - Check relay. Replace if defective.

Electrical System (Continued)

4.1-23 Up Circuit Inoperative from Platform

1. Lift/Drive select switch S3 in drive position.
   - Select lift on lift/drive select switch.
2. Defective contact on lift/drive select switch S3 between wire #B and wire #14.
   - Check continuity through contact. Replace if defective.
3. Defective forward switch S7-5 on controller S7.
   - Check switch. Replace if defective.
4. Loose or broken wire #B from forward switch S7-5 to contact on lift/drive select switch S3.
   - Check continuity. Replace if defective.
5. Loose or broken wire #14 from contact on lift/drive select switch S3 to base terminal block TB1.
   - Check continuity. Replace if defective.

4.1-24 Up Circuit Inoperative from Base Control Console

1. Loose or broken wire #10E from base terminal block TB1 to base/up/down switch S2.
   - Check continuity. Replace if defective.
2. Loose or broken wire #14E from base/up/down switch S2 to base terminal block TB1.
   - Check continuity. Replace if defective.
3. Defective base/up/down switch S2.
   - Check switch. Replace if defective.
4. Open diode D14E-1.
   - Check diode. Replace if defective.
5. Loose or broken wire #10E from base terminal block to control module CM1 at pin #P2-2. (CE)
   - Check continuity. Replace if defective.

4.1-25 Up Circuit Inoperative from Platform or Base Control Console (without Outriggers)

1. Loose or broken wire #14 from base terminal block TB1 to up relay jumper between wire #14 and #14A.
   - Check continuity. Replace if defective.
2. Loose or broken up relay jumper wire between wires #14 and #14A.
   - Check continuity. Replace if defective.
3. Loose or broken wire #14A from up relay jumper to base terminal block TB1.
   - Check continuity. Replace if defective.
4. Loose or broken wire #14 from base terminal block to control module CM1 at pin #P2-3 (CE).
   - Check continuity. Replace if defective.
5. Loose or broken wire #14A from base terminal block TB1 to lift valve coil 3H-14A.
   - Check continuity. Replace if defective.
6. Loose or broken wire #02 from lift valve coil 3H-14A to base terminal block TB1.
   - Check continuity. Replace if defective.
7. Defective lift valve coil 3H-14A.
   - Check coil. Replace if defective.
8. Defective diode D14A-1.
   - Check diode. Replace if defective.

4.1-26 Platform will Not Lift from Platform or Base Control Console with Outriggers Retracted (Lift Operates Correctly with Outriggers Extended)

1. Outriggers not fully retracted.
   - Fully retract outrigger cylinders.
2. Loose or broken wire #10A from base terminal block TB1 to pin #4 on connector CN14 at the outrigger board.
   - Check continuity. Replace if defective.

Electrical System (Continued)

3. Loose or broken wire #10A from outrigger board to outrigger limit switch LS64.
   - Check continuity. Replace if defective.
4. Defective outrigger limit switch LS64.
   - Check switch. Replace if defective.
5. Loose or broken wire #64 from outrigger limit switch LS64 to outrigger board.
   - Check continuity. Replace if defective.
6. Loose or broken wire #64 from outrigger board to outrigger limit switch LS63.
   - Check continuity. Replace if defective.
7. Defective outrigger limit switch LS63.
   - Check continuity. Replace if defective.
8. Loose or broken wire #63 from outrigger limit switch LS63 to outrigger board.
   - Check continuity. Replace if defective.
9. Loose or broken wire #63 from outrigger board to outrigger limit switch LS62.
   - Check continuity. Replace if defective.
10. Defective Limit Switch LS62.
    - Check switch. Replace if defective.
11. Loose or broken wire #62 from outrigger limit switch LS62 to outrigger board.
    - Check continuity. Replace if defective.
12. Loose or broken wire #62 from outrigger board to outrigger limit switch LS61.
    - Check continuity. Replace if defective.
13. Defective outrigger limit switch LS61.
    - Check switch. Replace if defective.
14. Loose or broken wire #61 from outrigger limit switch LS61 to outrigger board.
    - Check continuity. Replace if defective.
15. Open diode D36 on outrigger board.
    - Check diode. Replace if defective.
16. Open diode D36-1 at pin #1 on CN22 on outrigger board.
    - Check diode. Replace if defective.

4.1-27 Platform will Not Lift from Platform or Base Control Console with Outriggers Extended

1. Outriggers not extended enough.
   - Extend outriggers to take weight off tires (refer to operator section).
2. Loose or broken wire #10A from base terminal block TB1 to pin #4 on connector CN14 at the outrigger board.
   - Check continuity. Replace if defective.
3. Loose or broken wire #10A from outrigger board to outrigger limit switch LS68.
   - Check continuity. Replace if defective.
4. Defective outrigger limit switch LS68.
   - Check switch. Replace if defective.
5. Loose or broken wire #68A from outrigger limit switch LS68 to outrigger board.
   - Check continuity. Replace if defective.
6. Loose or broken wire #10A from outrigger board to outrigger limit switch LS67.
   - Check continuity. Replace if defective.
7. Defective outrigger limit switch LS67.
   - Check switch. Replace if defective.
8. Loose or broken wire #67A from outrigger limit switch LS67 to outrigger board.
   - Check continuity. Replace if defective.
9. Loose or broken wire #10A from outrigger board to outrigger limit switch LS66.
   - Check continuity. Replace if defective.

Electrical System (Continued)

10. Defective outrigger limit switch LS66.
    - Check switch. Replace if defective.
11. Loose or broken wire #66A from outrigger limit switch LS66 to outrigger board.
    - Check continuity. Replace if defective.
12. Loose or broken wire #10A from outrigger board to outrigger limit switch LS65.
    - Check continuity. Replace if defective.
13. Defective outrigger limit switch LS65.
    - Check switch. Replace if defective.
14. Loose or broken wire #65A from outrigger limit switch LS65 to outrigger board.
    - Check continuity. Replace if defective.
15. Check for power on wire #65 at outrigger control module at pin P2-8.
    - If no voltage present, proceed to outrigger control module troubleshooting.
16. Loose or broken wire #65 from outrigger control module at pin P2-8 to outrigger board.
    - Check continuity. Replace if defective.
17. Open diode D14A-2 at base terminal block TB1.
    - Check diode. Replace if defective.

4.1-28 Platform will Not Lift from Platform or Base Control Console with Outriggers Extended or Retracted

1. Defective lift enable relay 65CR.
    - Check relay. Replace if defective.
2. Defective lift disable relay 17DCR.
    - Check relay. Replace if defective.
3. Loose or broken wire #14 from base terminal block TB1 to outrigger/ generator harness connector.
    - Check continuity. Replace if defective.
4. Loose or broken wire #02 from base terminal block TB1 to outrigger/ generator harness connector.
    - Check continuity. Replace if defective.
5. Loose or broken wire #14 from base terminal block to control module CM1 at pin #P2-3 (CE).
    - Check continuity. Replace if defective.
6. Defective up relay 14CR.
    - Check relay. Replace if defective.
7. Loose or broken wire #36A from pin#10 on connector CN14 to up relay 14CR.
    - Check continuity. Replace if defective.
8. Loose or broken wire #14A from up relay 14CR to base terminal block TB1.
    - Check continuity. Replace if defective.

4.1-29 Down Circuit Inoperative from Platform

1. Lift/Drive select switch S3 in drive position.
    - Select lift on lift/drive select switch.
2. Defective reverse switch S7-4 on controller S7.
    - Check continuity through switch. Replace if defective.
3. Loose or broken wire #A from reverse switch S7-4 to contact on lift/drive select switch S3.
    - Check continuity. Replace if defective.
4. Defective contact on lift/drive select switch S3 between wire #A and wire #13.
    - Check continuity through contact. Replace if defective.
5. Loose or broken wire #13 from lift/drive select switch S3 to base terminal block TB1.
    - Check continuity. Replace if defective.
6. Loose or broken wire #13 from base terminal block TB1 to lowering valve 2H-13 or holding valve 2H-13-1 and 2H-13-2.
    - Check continuity. Replace if defective.

Electrical System (Continued)

7. Loose or broken wire #02 from base terminal block TB1 to lowering valve 2H-13 or holding valve 2H-13-1 and 2H-13-2.
   - Check continuity. Replace if defective.
8. Defective lowering valve coil 2H-13 or holding valve 2H-13-1 and 2H-13-2.
   - Check Coil. Replace if defective.

4.1-30 Down Circuit Inoperative from Base

1. Loose or broken wire #10E from base terminal block TB1 to base up/down switch S2.
   - Check continuity. Replace if defective.
2. Loose or broken wire #13 from base up/down switch S2 to base terminal block TB1.
   - Check continuity. Replace if defective.
3. Defective base up/down switch S2.
   - Check switch. Replace if defective.
4. Loose or broken wire #13 from base terminal block TB1 to lowering valve 2H-13 or holding valve 2H-13-1 and 2H-13-2. (ANSI/CSA)
   - Check continuity. Replace if defective.
5. Loose or broken wire #02 from base terminal block TB1 to lowering valve 2H-13 or holding valve 2H-13-1 and 2H-13-2. (ANSI/CSA)
   - Check continuity. Replace if defective.
6. Defective lowering valve coil 2H-13 or holding valve 2H-13-1 and 2H-13-2. (ANSI/CSA)
   - Check Coil. Replace if defective.

4.1-31 No Down Function (Additional for machines with Load Sensing System) (CE)

1. Loose or broken wire #02 from base terminal strip TB1 to down enable relay 28CR or auxiliary down enable relay 28ECR3.
   - Check continuity. Replace if defective.
2. Defective down enable relay 28CR or auxiliary down enable relay 28ECR3.
   - Check relay. Replace if defective.
3. Loose or broken wire #28 from control module CM1 at pin #P3-4 to down enable relay 28CR.
   - Check continuity. Replace if defective.
4. Loose or broken wire #28E from control module CM1 at pin #P3-6 to auxiliary down enable relay 28ECR3.
   - Check continuity. Replace if defective.
5. Loose or broken wire #13 from base terminal block to down enable relay 28CR.
   - Check continuity. Replace if defective.
6. Loose or broken wire #13 from base terminal block to control module CM1 at pin #P2-4.
   - Check continuity. Replace if defective.
7. Loose or broken wire #13A from auxiliary down enable relay 28ECR3 to down enable relay 28CR.
   - Check continuity. Replace if defective.
8. Loose or broken wire #13B from auxiliary down enable relay 28CR3 to lowering valve 2H-13B or holding valve 2H-13B-1 and 2H-13B-2.
   - Check continuity. Replace if defective.
9. Loose or broken wire #02 from base terminal block TB1 to lowering valve 2H-13B or holding valve 2H-13B-1 and 2H-13B-2.
   - Check continuity. Replace if defective.
10. Defective lowering valve coil 2H-13B or holding valve 2H-13B-1 and 2H-13B-2.
    - Check Coil. Replace if defective.

Electrical System (Continued)

4.1-32 Hydraulic Generator Inoperative

1. Key switch S3 in drive position.
   - Turn switch to lift position.
2. Loose or broken wire #9 from base terminal block TB1 to generator relay 86BCR.
   - Check continuity. Replace if defective.
3. Loose or broken wire #9 from generator relay 86BCR to generator switch S12.
   - Check continuity. Replace if defective.
4. Defective generator switch S12.
   - Check switch. Replace if defective.
5. Loose or broken wire #85 from generator switch S12 to generator relay 86ACR.
   - Check continuity. Replace if defective.
6. Loose or broken wire #86B from generator relay 86ACR to generator relay 86BCR.
   - Check continuity. Replace if defective.
7. Defective relay 86ACR.
   - Check relay. Replace if defective.
8. Defective relay 86BCR.
   - Check relay. Replace if defective.
9. Loose or broken wire #2A from hour meter to relay 86BCR.
   - Check continuity. Replace if defective.
10. Loose or broken wire #86C from generator relay 86BCR to generator relay 86CCR.
    - Check continuity. Replace if defective.
11. Open diode D86C.
    - Check diode. Replace if defective.
12. Loose or broken wire #85 from diode D86C to relay 86ACR.
    - Check continuity. Replace if defective.
13. Loose or broken wire #02 from base terminal block TB1 to relay 86CCR.
    - Check continuity. Replace if defective.
14. Defective relay 86CCR.
    - Check relay. Replace if defective.
15. Loose or broken wire #43 from relay 32CR1 to relay 86CCR.
    - Check continuity. Replace if defective.
16. Loose or broken wire #86D from relay 86CCR to generator valve coil 2H-86D.
    - Check continuity. Replace if defective.
17. Loose or broken wire #02 from base terminal block to generator valve coil 2H-86D.
    - Check continuity. Replace if defective.
18. Defective generator valve coil 2H-86D.
    - Check coil. Replace if defective.
19. Open diode D86D.
    - Check diode. Replace if defective.
20. Loose or broken wire #17A from diode D86D to base terminal block TB1.
    - Check continuity. Replace if defective.

4.1-33 Hydraulic Generator will not Shut Off from Generator Switch

1. Defective generator switch S12.
   - Check switch. Replace if defective.
2. Loose or broken wire #86 from generator switch S12 to diode D86.
   - Check continuity. Replace if defective.

Electrical System (Continued)

3. Open diode D86.
   - Check diode. Replace if defective.
4. Defective relay 86ACR.
   - Check relay. Replace if defective.
5. Loose or broken wire #02 from base terminal block to relay 86ACR.
   - Check continuity. Replace if defective.

4.1-34 All Outriggers Inoperative (Auto-Level and Manual)

WARNING

Scissors lift must be below high speed limit switch for outriggers to function.

NOTE

For the outriggers to function the upper control box must be in the lift position and the scissor stack stowed or fully retracted.

1. Loose or broken wire # 44 from base terminal block TB1 to pin #6 on connector CN14 on outrigger board.
   - Check for continuity. Replace if defective.
2. No power at wire #9 at pin #5 on connector CN14 on outrigger board.
   - If no power is present check for continuity on wire #9 back to the main terminal block TB1. Replace if defective.
3. Defective relay 9CR2 or 9CR3 on outrigger board.
   - Check relays. Replace if defective.
4. Open diode D17C-1 on outrigger board.
   - Check diode. Replace if defective.
5. Defective relay 17DCR on outrigger board.
   - Check relay. Replace if defective.
6. Open or defective fuse jumper J17E on outrigger board.
   - Check fuse. Replace if defective.
7. Loose or broken wire # 17A from pin #2 on connector CN14 on outrigger board to terminal block TB1.
   - Check for continuity. Replace if defective.
8. Loose or broken wire #17C at pin #1 or wire #02 at pin #2 on connector CN21 on outrigger board to outrigger holding valve coil 2H-17C.
   - Check for continuity. Replace if defective.
9. Defective outrigger holding valve coil 2H-17C.
   - Check coil. Replace if defective.

4.1-35 All Outriggers Inoperative (Auto-Level and Manual from Platform Controls)

1. Loose or broken wires #35C at pin #1 on connector CN20 on outrigger board through outrigger cables and plugs to the outrigger enable switch S9A in the control box.
   - Check for continuity. Replace if defective.
2. Loose or broken wire #35D from outrigger enable switch S9A to pin #5 on the outrigger control console plug.
   - Check for continuity. Replace if defective.
3. Defective outrigger enable switch S9A.
   - Check switch. Replace if defective.

Electrical System (Continued)

4.1-36 All Outriggers Inoperative (Base Controls only)

1. Defective outrigger enable switch S9B.
   - Check switch. Replace if defective.

4.1-37 All Outriggers Inoperative (Auto Level only)

A: Led Power Indicator Light at Outrigger Control Module (OCM1) Not On (Constant)

1. Loose or broken wire #10A at pin #1 of the tilt switch connector to pin P2-12 on the outrigger control module OCM1.
   - Check for continuity. Replace if defective.
2. Loose or broken wire #10A at pin #1 of the tilt switch connector to base terminal block TB1.
   - Check for continuity. Replace if defective.
3. Loose or broken wire # 02 at pin #3 of the tilt switch connector to pin P2-11 on the outrigger control module OCM1.
   - Check for continuity. Replace if defective.
4. Loose or broken wire #02 at pin #3 of the tilt switch connector to base terminal block TB1.
   - Check for continuity. Replace if defective.
5. Defective outrigger control module OCM1.
   - Replace.

Electrical System (Continued)

4.1-38 All Outriggers Inoperative (Auto Level only)
B: Led Power Indicator Light at Outrigger Control Module (OCM1) Flashing

Flash Code	Probable Cause	Remedy
1/1	1. Outriggers are all up and machine is tilted.	1. Level the machine.
1/2	1. Machine is elevated. 2. Loose or broken wire # 35.	1. Lower the scissor stack below high speed limit switch. 2. Check for input voltage on wire #35 at pin P2-10 of the outrigger control module (OCM1). Replace if defective.
2/2	1. At least one outrigger is not fully retracted. 2. Defective outrigger rod limit switch (LS61, LS62, LS63, LS64) or wiring. 3. Defective diode (D36) on outrigger board.	1. Fully retract all outriggers. 2. Replace defective or damaged switch(es) or wiring. 3. Check for continuity. Replace if defective.
2/1	1. Outriggers are all down and the machine is not fully level.	1. Move machine to less sloped terrain if it will not lift.
5/5	1. Power on wire #70 or #79 at power on. 2. Power on wire #70 or #79 when manually operating outriggers.	1. Check for power on wire #70 or #79 at pin P2-5 or P2-6 of the outrigger control module. Replace defective component. 2. Check for power on wire #70 or #79 while manually operating an outrigger.
5/2	1. Low or no voltage on wire #35c. 2. Loose or broken wire on #35c.	1. Check battery and charging system to ensure minimum 9 volts. 2. Check for input voltage on wire #35c at pin P4-9 of outrigger control module (OCM1).
7/1	1. Excessive vibration. 2. Defective outrigger control module.	1. Outrigger control module cannot read tilt sensor. 2. Replace.
6/6	1. Outriggers are being manually controlled.	1. Indicates function activated. No repair necessary.
7/8	1. Error occured while self diagnosing the hardware fail safe.	1. Turn off power to reset the outrigger control module. Turn power back on and see if the code has cleared. If problem persists, replace outrigger control module.
5/1	1. Low input voltage to outrigger control module.	1. Check for minimum 9 volts between wire #02 at pin P2-11 and wire #10A at pin P2-12 at outrigger control module.
7/7	1. Startup error occurred while self diagnosing.	1. Turn off power to reset the outrigger control module. Turn power back on and see if the code has cleared. If problem persists, replace outrigger control module.
7/5	1. Internal failure of OCM1.	1. Turn off power to reset the outrigger control module. Turn power back on and see if the code has cleared. If problem persists, replace outrigger control module.
7/2	1. Internal failure of OCM1.	1. Turn off power to reset the outrigger control module. Turn power back on and see if the code has cleared. If problem persists, replace outrigger control module.
8/1	1. Internal failure of OCM1.	1. Turn off power to reset the outrigger control module. Turn power back on and see if the code has cleared. If problem persists, replace outrigger control module.
8/2	1. Internal failure of OCM1.	1. Turn off power to reset the outrigger control module. Turn power back on and see if the code has cleared. If problem persists, replace outrigger control module.
8/3	1. Internal failure of OCM1.	1. Turn off power to reset the outrigger control module. Turn power back on and see if the code has cleared. If problem persists, replace outrigger control module.
8/4	1. Internal failure of OCM1.	1. Turn off power to reset the outrigger control module. Turn power back on and see if the code has cleared. If problem persists, replace outrigger control module.
8/5	1. Internal failure of OCM1.	1. Turn off power to reset the outrigger control module. Turn power back on and see if the code has cleared. If problem persists, replace outrigger control module.
7/6	1. Internal failure of OCM1.	1. Turn off power to reset the outrigger control module. Turn power back on and see if the code has cleared. If problem persists, replace outrigger control module.

60416AB

Electrical System (Continued)

4.1-39 Left Front Outrigger Inoperative Manually

1. Defective left front outrigger switch S20 at platform control console or S20A at base control console.
   - Check switch. Replace if defective.
2. Loose or broken wire #71(up) from outrigger control console to pin #6 (up) on connector CN20 at outrigger board, or wire #75 (down) to pin #7 (down).
   - Check continuity. Replace if defective.
3. Open diode D71 (up) or D75 (down) on outrigger board.
   - Check diode. Replace if defective.
4. Loose or broken wire #71(up) at pin #7 (up) or pin #75 (down) at pin #8 (down) on connector CN21 at outrigger board to valve coil 4H-71 (up) or 4H-75 (down).
   - Check continuity. Replace if defective.
5. Loose or broken wire #02 from valve coil 4H-71 (up) or 4H-75 (down) to pin #2 on connector CN21 at the outrigger board.
   - Check continuity. Replace if defective.

4.1-40 Right Front Outrigger Inoperative Manually

1. Defective right front outrigger switch S21 at platform control console or S21A at base control console.
   - Check switch. Replace if defective.
2. Loose or broken wire #72 (up) from outrigger control console to pin #8 (up) on connector CN20 at outrigger board, or wire #76 (down) to pin #9 (down).
   - Check continuity. Replace if defective.
3. Open diode D72 (up) or D76 (down) on outrigger board.
   - Check diode. Replace if defective.
4. Loose or broken wire #72 (up) at pin #9 (up) or wire #76 (down) at pin #10 (down) on connector CN21 at outrigger board to valve coil 4H-72 (up) or 4H-76 (down).
   - Check continuity. Replace if defective.
5. Loose or broken wire #02 from valve coil 4H-72 (up) or 4H-76 (down) to pin #2 on connector CN21 at the outrigger board.
   - Check continuity. Replace if defective.

4.1-41 Right Rear Outriggers Inoperative Manually

1. Defective right rear outrigger switch S22 at platform control console or S22A at base control console.
   - Check switch. Replace if defective.
2. Loose or broken wire #73(up) from outrigger control console to pin #3 (up) on connector CN20 at outrigger board, or wire #77 (down) to pin #4 (down).
   - Check continuity. Replace if defective.
3. Open diode D73 (up) or D77 (down) on outrigger board.
   - Check diode. Replace if defective.
4. Loose or broken wire #73(up) at pin #4 (up) or wire #77 (down) at pin #5 (down) on connector CN21 at outrigger board to valve coil 4H-73 (up) or 4H-77 (down).
   - Check continuity. Replace if defective.
5. Loose or broken wire #02 from valve coil 4H-73 (up) or 4H-77 (down) to pin #2 on connector CN21 at the outrigger board.
   - Check continuity. Replace if defective.

4.1-42 Left Rear Outriggers Inoperative Manually

1. Defective left rear outrigger switch S23 at platform control console or S23A at base control console.
   - Check switch. Replace if defective.
2. Loose or broken wire #74 (up) from outrigger control console to pin #5 (up) on connector CN20 at outrigger board, or #78 (down) from pin #2 (down).
   - Check continuity. Replace if defective.
3. Open diode D74 (up) or D78 (down) on outrigger board.
   - Check diode. Replace if defective.

Electrical System (Continued)

4. Loose or broken wire #74(up) at pin #6 (up) or wire #78 (down) at pin #3 (down) on connector CN21 at outrigger board to valve coil 4H-74 (up) or 4H-78 (down).
   - Check continuity. Replace if defective.
5. Loose or broken wire #02 from valve coil 4H-74 (up) or 4H-78 (down) to pin #2 on connector CN21 at the outrigger board.
   - Check continuity. Replace if defective.

4.1-43 Individual Outrigger Functions Inoperative (Auto-Level)

1. Loose or broken wire #71- #75 (depending on function not working) at outrigger control module plug P4 pins 1-8.
   - Check connections of outrigger functions not working (refer to Section 5 for pin reference chart). Replace if defective.
2. No output from outrigger control module OCM1 at plug P4 pins 1-8.
   - Turn off power to reset the outrigger control module. Turn power back on and retest. If problem persists, replace outrigger control module.

4.1-44 Auto-Level Inoperative

1. Loose or broken wire #35D from outrigger enable switch S9A to auto mode outrigger switch S24.
   - Check continuity. Replace if defective.
2. Defective auto mode outrigger switch S24.
   - Check switch. Replace if defective.
3. Loose or broken wire #10A at pin #P2-12 on outrigger control module OCM1.
   - Check for power at P2-12. If no voltage present, check continuity of wire. Replace if defective.
4. Loose or broken wire #44 at pin #P2-10 on outrigger control module OCM1.
   - Check for power at P2-10. If no voltage present, check continuity of wire. Replace if defective.
5. Loose or broken wire #02 at pin #P2-11 on outrigger control module OCM1.
   - Check for ground at P2-11. If no ground present, check continuity of wire. Replace if defective.
6. Loose or broken wire #70 from auto mode outrigger switch S24 to pin #P2-5 on outrigger control module OCM1.
   - Check continuity. Replace if defective.
7. For additional information, refer to sections 4 & 5 “Outrigger Control Module - Troubleshooting.”

4.1-45 Auto All Up Inoperative (Retract)

1. Loose or broken wire #35D from outrigger enable switch S9A to auto mode outrigger switch S24.
   - Check continuity. Replace if defective.
2. Defective auto mode outrigger switch S24.
   - Check switch. Replace if defective.
3. Loose or broken wire #10A at pin #P2-12 on outrigger control module OCM1.
   - Check for power at P2-12. If no voltage present, check continuity of wire. Replace if defective.
4. Loose or broken wire #44 at pin #P2-12 on outrigger control module OCM1.
   - Check for power at P2-10. If no voltage present, check continuity of wire. Replace if defective.
5. Loose or broken wire #02 at pin #P2-11 on outrigger control module OCM1.
   - Check for ground at P2-11. If no ground present, check continuity of wire. Replace if defective.
6. Loose or broken wire #79 from auto mode outrigger switch S24 to pin #P2-6 on outrigger control module OCM1.
   - Check continuity. Replace if defective.
7. For additional information, refer to section 5 “Outrigger Control Module.”

Hydraulic System

4.2-1 All Functions Inoperative

1. Hydraulic oil level low.
   - Refill tank to proper level.
2. Defective pump P1.
   - Check pump. Repair or replace if defective.
3. Broken engine to pump coupler.
   - Check coupler. Replace if defective.
4. Relief valve R1 open.
   - Check valve. Replace if defective.

4.2-2 Steering Inoperative

1. Stuck or defective steer right valve 4H-23A or steer left valve 4H-24A.
   - Check valves. Replace if defective.
2. Steer cylinder C7 damaged or bypassing internally.
   - Check cylinder. Repair or replace if defective.

4.2-3 Lift, Steer and First Drive Speed Inoperative

1. Small pump dump valve 2H-18B stuck open.
   - Check valve. Repair or replace if defective.
2. Worn or defective small pump section of pump P1.
   - Check pump. Repair or replace if defective.
3. Check valve CV1 or CV2 stuck.
   - Check valves. Clean or replace if defective.

4.2-4 Second Drive Speed Inoperative

1. Large pump dump valve 2H-17A stuck open.
   - Check valve. Repair or replace if defective.
2. Worn or defective large pump section of pump P1.
   - Check pump. Repair or replace if defective.
3. Check valve CV1 or CV2 stuck.
   - Check valves. Clean or replace if defective.

4.2-5 Drive Inoperative

1. Stuck or defective drive reverse valve 4H-15A or drive forward valve 4H-16A.
   - Check valves. Repair or replace if defective.
2. Defective drive relief valve R5.
   - Check valve. Replace if defective.
3. Stuck or defective main counterbalance valve CB1.
   - Check valve. Repair or replace if defective.
4. Defective drive motor M1, M2, M3 or M4.
   - Check motor. Repair or replace if defective.
5. Free wheeling valve V2 open or defective.
   - Close valve. Repair or replace if defective.
6. Stuck or defective high speed valve 2H-20B.
   - Check valve. Repair or replace if defective.
7. Cushion cylinder C8 bypassing internally.
   - Check cylinder. Repair or replace if defective.

Hydraulic System (Continued)

4.2-6 Drive Sluggish

1. Stuck open or defective valve CV3, CV4, CV5, or CV6.
   - Check valve. Replace if defective.
2. Drive relief valve R5 set too low.
   - Refer to Section 5 of this manual for setup procedure.
3. Defective flow divider FD1.
   - Check flow divider. Replace if defective.

4.2-7 Reverse Drive Inoperative

1. Stuck or defective drive valve 4H-15A.
   - Check valve. Repair or replace if defective.

4.2-8 Forward Drive Inoperative

1. Stuck or defective drive valve 4H-16A.
   - Check valve. Repair or replace if defective.

4.2-9 Drive Inoperative When in Low Drive

1. Stuck or defective parallel counterbalance valve CB2.
   - Check valve. Replace if defective.
2. Stuck or defective parallel forward drive valve 4H-16B or parallel reverse valve 4H-15B.
   - Check valve. Replace if defective.

4.2-10 Drive Inoperative When in High Drive

1. Stuck or defective series/parallel valve 4H-20A.
   - Check valve. Replace if defective.
2. Stuck or defective main counterbalance valve CB1.
   - Check valve. Replace if defective.

4.2-11 Brakes Will Not Release

1. Stuck or defective brake valve 3H-30.
   - Check valve. Repair or replace if defective.
2. Stuck or defective auto reset valve V6.
   - Check valve. Repair or replace if defective.

4.2-12 Up Circuit Inoperative

1. Stuck or defective lift valve 3H-14A.
   - Check valve. Repair or replace if defective.
2. Misadjusted or defective lift relief valve R2.
   - Adjust valve. Replace if defective.
3. Stuck or defective lowering valve 2H-13.
   - Check valve. Repair or replace if defective.
4. Stuck or defective manual lowering valve V1.
   - Check valve. Repair or replace if defective.
5. Open manual override on holding valve 2H13-1 or 2H13-2.
   - Depress and turn manual override clockwise to close. Replace if defective.
6. Stuck holding valve 2H13-1 or 2H13-2.
   - Check valves. Repair or replace if defective.

Hydraulic System (Continued)

4.2-13 Down Circuit Inoperative

1. Stuck or defective lowering valve 2H-13.
   - Check valve. Repair or replace if defective.
2. Stuck holding valve 2H13-1 or 2H13-2.
   - Check valves. Repair or replace if defective.
3. Plugged lowering orifice O1.
   - Clean or replace orifice.

4.2-14 Hydraulic Generator Inoperative

1. Stuck or defective hydraulic generator valve 2H-86D.
   - Check valve. Repair or replace if defective.
2. Misadjusted or defective flow control valve FC1.
   - Adjust valve. Replace if defective.
3. Stuck or defective large pump dump valve 2H-17A.
   - Check valve. Repair or replace if defective.
4. Defective hydraulic generator hydraulic motor GM1.
   - Check motor. Repair or replace if defective.

4.2-15 All Outriggers Inoperative

1. Stuck or defective outrigger holding valve 2H-17C.
   - Check valve. Repair or replace if defective.

4.2-16 Left Front Outriggers Inoperative

1. Stuck or defective retract valve 4H-71 or extend valve 4H-75.
   - Clean valve. Replace if defective.
2. Stuck or defective check valve CV7.
   - Check valve. Replace if defective.
3. Bypassing outrigger cylinder C9.
   - Repack cylinder. Replace if defective.

4.2-17 Right Front Outriggers Inoperative

1. Stuck or defective retract valve 4H-72 or extend valve 4H-76.
   - Clean valve. Replace if defective.
2. Stuck or defective check valve CV8.
   - Check valve. Replace if defective.
3. Bypassing outrigger cylinder C10.
   - Repack cylinder. Replace if defective

4.2-18 Right Rear Outriggers Inoperative

1. Stuck or defective retract valve 4H-73 or extend valve 4H-77.
   - Clean valve. Replace if defective.
2. Stuck or defective check valve CV9.
   - Check valve. Replace if defective.
3. Bypassing outrigger cylinder C11.
   - Repack cylinder. Replace if defective.

4.2-19 Left Rear Outriggers Inoperative

1. Stuck or defective retract valve 4H-74 or extend valve 4H-78.
   - Clean valve. Replace if defective.

Hydraulic System (Continued)

2. Stuck or defective check valve CV10.
   - Check valve. Replace if defective.
3. Bypassing outrigger cylinder C12.
   - Repack cylinder. Replace if defective

4.2-20 Outriggers Drift In

1. Defective check valve left front CV7, right front CV8, right rear CV9 or left rear CV10.
   - Clean valve. Replace if defective.
2. Outriggers cylinder bypassing left front C9, right front C10, right rear C11 or left rear C12.
   - Repack cylinder. Replace if defective.

Load Sensing System - CE

Load Sense System Flash Codes

4.3-1 Flash Code F01: Check HWFS

1. This message is given if the GP102 startup tests have not completed.
   - Check HELP message for more information.

4.3-2 Flash Code F02: Not Ground Mode

1. This message is given if the machine is not in ground mode, P2-2 must be high.
   - Calibration can only be carried out in ground mode.

4.3-3 Flash Code F03: Not Stopped

1. This message is given if the machine is not in ground mode, P2-2 must be high.
   - Check DIAGNOSTICS / SWITCHES to see which function switch is closed.

4.3-4 Flash Code F04: Tilted

1. This message is given if the machine is tilted.
   - Calibration must be carried out with the machine level. If the machine is level, use the
   - SETUPS / TILT SETUPS to set the GP102 level.

4.3-5 Flash Code F05: Bad Height

1. This message is given if the height sensor output P4-3 is out of range at the start of calibration.
   - The height sensor output must be between 1.0V and 4.0V. Check DIAGNOSTICS / SENSORS to see the output. A reading of 0V or 5V is probably due to a wiring problem.

4.3-6 Flash Code F06: Check Elev

1. This message is given if the elevation switch P2-10 is open at the start of calibration, when the operator has confirmed the “PLATFORM DOWN?” question.
   - If the platform is down, check the elevation switch wiring.

4.3-7 Flash Code F08: Check Elev

1. This message is given if the elevation switch P2-10 is closed at the end of the DYNAMIC lift, when the platform should be fully raised.
   - This message would occur if the UP switch was accidentally opened near the start of the DYNAMIC lift. If the platform is fully raised, check the elevation switch wiring.

4.3-8 Flash Code F09: Bad Height

1. This message is given if the height sensor output P4-3 is out of range at the start of the DYNAMIC lift.
   - The height sensor output must be between 1.0V and 4.0V. Check DIAGNOSTICS / SENSORS to see the output.

4.3-9 Flash Code F10: Bad Height

1. This message is given if the height sensor output P4-3 is out of range at the end of the DYNAMIC lift.
   - The height sensor output must be between 1.0V and 4.0V. Check DIAGNOSTICS / SENSORS to see the output. A reading of 0V or 5V is probably due to a wiring problem.

4.3-10 Flash Code F11: Not Up

1. This message occurs at the start of the DYNAMIC lift if the operator selects a function other than UP.
   - Select the UP function.

Load Sensing System - CE

4.3-11 Flash Code F12: Too Many

1. This message occurs if the DYNAMIC lift takes too long. This message could occur if the UP switch was not released at the end of the dynamic lift.
    - If the machine takes more than two minutes to lift, the GP102 may need modification to avoid this problem.

4.3-12 Flash Code F13: Low Height Range

1. This message occurs at the end of the DYNAMIC lift if the height sensor output did not change sufficiently to give a reasonably accurate platform height estimate.

   This message could occur if the UP switch was accidentally opened too early (when the platform is not fully raised).
    - This message would occur if the UP switch was accidentally opened near the start of the DYNAMIC lift. If the platform is fully raised, check the elevation switch wiring.

4.3-13 Flash Code F14: Bad Height

1. This message occurs if the height sensor output P4-3 is out of range during the DYNAMIC lift.
    - The height sensor output must be between 1.0V and 4.0V. Check DIAGNOSTICS / SENSORS to see the output. A reading of 0V or 5V is probably due to a wiring problem.

4.3-14 Flash Code F15: Check Elev

1. This message is given if the elevation switch P2-10 is open when the platform has been fully lowered after the DYNAMIC lift.

   This message would occur if the DOWN switch was accidentally opened before the platform was fully lowered.
    - If the platform is fully lowered, check the elevation switch.

4.3-15 Flash Code F16: Low Elev.open

1. This message is given if the elevation switch P2-10 opened during lift at a too low height (below 5%).
    - If it opens below 5%, the pressure is probably too unpredictable to allow reliable detection of an overloaded platform when initially raised. Check CALIBRATIONS / HEIGHT CALS; the “ElevUp” value shows the recorded height where the switch opened.

4.3-16 Flash Code F17: High Elev.open

1. This message is given if the elevation switch P2-10 opened during lift at a too high height (above 25%).
    - If it opens above 25%, the platform is too high when the overloaded platform is detected! Check CALIBRATIONS / HEIGHT CALS; the “ElevUp” value shows the recorded height where the switch opened.

4.3-17 Flash Code F18: Low Elev.close

1. This message is given if the elevation switch P2-10 closed during lower at a too low height (below 5%).
    - If it closes below 5%, height sensor fault detection is compromised. Check CALIBRATIONS / HEIGHT CALS; the “ElevDown” value shows the recorded height where the switch opened.

Load Sensing System - CE

4.3-18 Flash Code F19: High Elev.close

1. This message is given if the elevation switch P2-10 closed during lower at a too high height (above 25%).
    - When the switch is closed, overload detection is normally disabled but if the switch closes above 25%, the platform is too high to allow disabled overload. Check CALIBRATIONS / HEIGHT CALS; the “ElevUp” value shows the recorded height where the switch opened.

4.3-19 Flash Code F20: Height<>0%

1. This message occurs if the platform height is not 0% after the platform has been fully lowered during either STATIC lift
    - The platform must return to the same height each time it is fully lowered.
    - Check DIAGNOSTICS / SYSTEM to check the height.

4.3-20 Flash Code F21:Height<>0%

1. This message occurs if the platform height is not 0% before the platform is raised during either STATIC lift.
    - The platform must be at 0% height when it is fully lowered.
    - Check DIAGNOSTICS / SYSTEM to check the height.

4.3-21 Flash Code F22:Height<>100%

1. This message occurs if the platform height is not 100% after the platform has been fully raised during either STATIC lift.
    - The platform must return to the same height each time it is fully raised.
    - Check DIAGNOSTICS / SYSTEM to check the height.

4.3-22 Flash Code F23:Height<>100%

1. This message occurs if the platform height is not 100% before the platform is lowered during either STATIC lift.
    - The platform must be at 100% height when it is fully raised.
    - Check DIAGNOSTICS / SYSTEM to check the height.

4.3-23 Flash Code F24:Too Many

1. This message occurs if too many static measurements are taken during either STATIC lift or lower.
    - It is likely that there is a problem with the lift cylinder pressure; the GP102 should only need about 10 measurements for most vehicles.
    - The SETUPS / HEIGHT SETUPS / MIN LIFT time could be increased to force a longer time between static measurements, but this should not be necessary.

4.3-24 Flash Code F25:Check Elev

1. This message indicates a problem with the elevation switch P2-10 during the STATIC phases.
    - The switch is either staying closed to a higher height, or staying open to a lower height, than that recorded during the DYNAMIC phase.

4.3-25 Flash Code F26:Check Elev

1. This message indicates a problem with the elevation switch P2-10 during the STATIC phases.
    - The switch is opening or closing at a different height than that recorded during the DYNAMIC phase.

4.3-26 Flash Code F27:Bad Height

1. This message indicates a problem with the height sensor output P4-3 during the STATIC phases.
    - The height sensor output must be between 1.0V and 4.0V at all times. Check DIAGNOSTICS / SENSORS to see the output. A reading of 0V or 5V is probably due to a wiring problem.

Load Sensing System - CE

4.3-27 Flash Code F30:Bad Heights

1. This message indicates that the recorded heights are not increasing during either STATIC lift, or are not decreasing during either STATIC lower.
    - It may be possible to cause this problem by repeatedly opening and closing the UP or DOWN switch during the STATIC phases.

4.3-28 Flash Code F31:Reject Curve

1. The DYNAMIC pressure curve is unacceptable.
    - An initial pressure peak when the platform lifted cannot be found between 0% and 15% height. Check the pressure sensor and lift cylinder hydraulics.

4.3-29 Flash Code F32:Reject Curve

1. The DYNAMIC pressure curve is unacceptable.
    - There should be a lowest pressure about halfway through the lift (i.e.: near 50% height); the lowest pressure measured is at too low a height.. Check the pressure sensor and lift cylinder hydraulics.

4.3-30 Flash Code F33:Reject Curve

1. The DYNAMIC pressure curve is unacceptable.
    - There should be a lowest pressure about halfway through the lift (i.e.: near 50% height); the lowest pressure measured is at too high a height. Check the pressure sensor and lift cylinder hydraulics.

4.3-31 Flash Code F34:Reject Curve

1. The DYNAMIC pressure curve is unacceptable.
    - There is not enough difference between the initial pressure peak and the minimum pressure. Check the pressure sensor and lift cylinder hydraulics.

4.3-32 Flash Code F40:Reject Delta

1. This message indicates that there is not enough difference between the loaded & empty pressure. This message could also occur if the wrong pressure sensor was fitted (e.g.: a 5000psi sensor when a 2000psi one is needed)
    - This message could occur if the platform were not properly loaded during the STATIC LOADED phase, or if the platform were not properly empty during the STATIC EMPTY phase. Check CALIBRATIONS / HEIGHT CALS; the “Height” indicates the first height at which there was insufficient difference and the “Up” and “Down” values show the loaded pressure (first) and the difference between loaded and empty pressure (second).

4.3-33 Flash Code F42:Low Pressure

1. This message indicates that the pressure is too low (0.5V or less) when the elevation switch opens during the DYNAMIC lift.
    - This message would occur if the pressure sensor was disconnected, or if there were some other wiring error. Check DIAGNOSTICS / SENSORS to check the pressure.

4.3-34 Flash Code F43:High Pressure

1. This message indicates that the pressure is too high (4.5V or more) when the elevation switch opens during the DYNAMIC lift.
    - This message would occur if the pressure sensor was disconnected, or if there were some other wiring error. Check DIAGNOSTICS / SENSORS to check the pressure.

4.3-35 Flash Code F44:Low Pressure

1. This message indicates that the pressure is too low (0.5V or less) at a STATIC measurement point.
    - This message would occur if the pressure sensor was disconnected, or if there were some other wiring error. Check DIAGNOSTICS / SENSORS to check the pressure.

Load Sensing System - CE

4.3-36 Flash Code F45:High Pressure

1. This message indicates that the pressure is too high (4.5V or more) at a STATIC measurement point.
    - This message would occur if the wrong pressure sensor was fitted, or if there were some other wiring error. Check DIAGNOSTICS / SENSORS to check the pressure.

4.3-37 Flash Code F46:Check Elev

1. This message indicates that the elevation switch opened more than once during the DYNAMIC lift.

4.3-38 Flash Code F47:Check Elev

1. This message indicates that the elevation switch closed more than once during the DYNAMIC lower.

Section 5
PROCEDURES

Table of Contents

General....3
Safety and Workmanship....3

Base

5.1-1 System Lift and Pressure Adjustment....3
5.1-2 Winching and Towing Procedures and Parking Brake System....4
5.1-3 Wheel Bolt/Nut Inspection and Torquing Procedure....5
5.1-4 Wheel Reinstallation and Torquing Procedure....5

Engine

5.2-1 Kubota Dual Fuel (DF972) Resistance Checks....6

Options

5.3-1 Auto-Leveling Outrigger PC Board Layout....8
5.3-2 Outrigger Mechanical Limit Switch Wiring....9
5.3-3 Auto-Leveling Outrigger Settings and Error Codes....10
5.3-4 Auto-Leveling Outrigger Error Code Breakdown....11
5.3-5 Hand Held Calibration/Diagnostic Tool Key Functions....12
5.3-6 Outrigger Control Module Instructions....13
5.3-7 Auto-Leveling Outrigger Control Module Pin Reference Chart....16

5

General
The following information is provided to assist you in the use and application of servicing and maintenance procedures contained in this chapter.

Safety and Workmanship
Your safety, and that of others, is the first consideration when engaging in the maintenance of equipment. Always be conscious of weight. Never attempt to move heavy parts without the aid of a mechanical device. Do not allow heavy objects to rest in an unstable position. When raising a portion of the equipment, ensure that adequate support is provided.

Base
5.1-1 System Lift and Pressure Adjustment
All adjustments must be made with a calibrated hydraulic gauge. Refer to the serial number nameplate located on the rear of the machine for system and lift pressure values.

System Relief Pressure Adjustment
1. Locate right steer hydraulic line at main manifold. (Refer to Hydraulic Manifold Component and Port Identification found in Section 3 for location.)
2. Tee in a calibrated 3000 psi gauge into the right steer line.
3. Remove operator's control box from guardrail and disconnect it from scissors control cable.
4. Locate electrical panel cable plug in the hydraulic/electric cabinet.
5. Disconnect scissors control cable and connect operator's control box cable.
6. At main manifold, loosen locknut on system relief valve (R1). (Refer to Hydraulic Manifold Component and Port Identification found in Section 3 for location.)
7. Select drive position with lift/drive select switch on platform control console.
8. Engage steer right with rocker switch of the controller handle and hold.
9. Observe reading on pressure gauge. Adjust system relief valve R1 to the pressure listed on the serial number nameplate.

NOTE

Turning the stem on the relief valve clockwise increases pressure. Turning the stem counter-clockwise decreases pressure.

10. Release steer switch and retighten locknut on system relief valve (R1).
11. Remove gauge from steer line.

Lift Pressure Adjustment

WARNING

Fully lower the platform.

1. Locate the lift line coming out of the main manifold. (Refer to Hydraulic Manifold Component and Port Identification found in Section 3 for location.)
2. Open manual lowering valve with platform fully lowered. Remove lift line from main manifold.
3. Install a 3000 psi gauge into the lift line port fitting on the main manifold. Plug the lift line going to the lift cylinders.
4. Loosen locknut on lift relief valve (R2). (Refer to Hydraulic Manifold Component and Port Identification found in Section 3 for location.)
5. Close the manual lowering valve.
6. At base controls in hydraulic/electric cabinet, depress and hold the up pushbutton.
7. Observe reading on pressure gauge. Adjust lift relief valve (R2) to the pressure listed on the serial number nameplate.

NOTE

Turning the stem on the relief valve clockwise increases pressure. Turning the stem counter-clockwise decreases pressure.

8. Release the up pushbutton and retighten locknut on lift relief valve (R2).
9. Remove gauge from lift line port fitting and reinstall the lift line.

WARNING

Ensure machine does not lift more than rated load.

5.1-2 Winching and Towing Procedures and Parking Brake System

This section provides the operator with procedures about towing and winching and on how to manually release the parking brake.

WARNING

Ensure platform is fully lowered before winching or towing. Sudden motion could cause the aerial platform to become unstable. Death or serious injury could result.

WARNING

In emergency situations where machine functions are not available and lowering is impeded by an obstacle, the utmost care must be taken to move the machine far enough to clear the obstacle. In such cases operation must be extremely smooth with no sudden movements and must not exceed a speed of 2"/sec.When pushing, towing or winching, do not exceed 2 mph (3.2 km/h).

Do not push, tow or winch vehicle on to a slope, or brake the towing vehicle rapidly. Do not pull the aerial platform down an incline towards a winch.

To Release the Free-Wheeling Valve

1. Make sure that the aerial platform is on level ground. Chock or block the wheels to keep aerial platform from rolling.

Diagram 5.1-1. Free-Wheeling Valve

2. **Free-Wheeling Valve** - Turning the valve knob counterclockwise (item 1) to a fully opened position allows fluid to flow through the wheel motors, thus providing "free-wheeling".

WARNING

The free-wheeling valve must be closed tightly (clockwise) for normal operation.

To Release the Parking Brakes Manually

WARNING

Do not manually disengage the parking brakes if the aerial platform is on a slope.

Diagram 5.1-2. Disc Brakes System

Parking Brakes - The brakes must be manually disengaged for pushing, towing or winching.

1. Make sure that the aerial platform is on level ground. Chock or block the wheels to keep aerial platform from rolling.

2. Turn emergency main power disconnect switch to off position.

3. Locate brake hand pump and brake auto reset valve at main manifold in hydraulic/fuel cabinet.

4. Push in brake auto reset valve (item 1).

5. Grasp the red hand pump (item 2) and rapidly depress until firm resistance is felt. The brakes are now released.

6. Remove the wheel chocks or blocks, then push, tow or winch the aerial platform to the desired location.

WARNING

The parking brake MUST be re-engaged immediately after reaching the desired location.

7. Position the machine on a firm and level surface.

8. Chock or block the wheels to prevent the aerial platform from rolling.

9. Re-engage the parking brakes by pulling out the black brake valve plunger.

5.1-3 Wheel Bolt/Nut Inspection and Torquing Procedure

It is necessary to check the torque on all wheel nuts and wheel bolts at pre-delivery, after 8 hours of operation and at weekly intervals using the following procedure:

1. Confirm that each wheel fastener is torqued to 80±5 ft-lb. All fasteners must be torqued using the tightening sequence below.

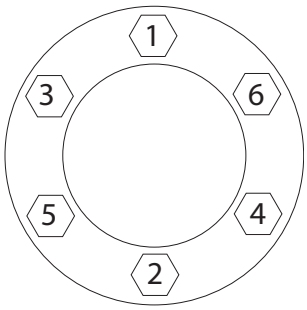


Diagram 5.1-3. Wheel Torque Sequence

2. Again, confirm that each wheel fastener is torqued to the specified tolerance. Re-torque as necessary until all fasteners are properly torqued.

5.1-4 Wheel Reinstallation and Torquing Procedure

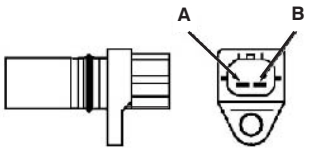
When a Wheel/Tire Assembly has been removed or replaced, it will be necessary to follow the procedure below to ensure proper installation:

1. Inspect wheel fastener threads for damage and defects. Replace if defective.
2. Clean the mounting surfaces of hub and the wheel rim of debris, rust, excess paint, etc.
3. Mount wheel on the hub, centering mounting holes on the wheel studs or bolt holes. Use appropriate lifting device as required.
4. Install wheel nuts or wheel bolts and hand tighten to center the rim.
5. Tighten nuts or bolts to approximately 50 ft-lb torque using the tightening sequence in procedure 5.1-3.
6. Tighten to 80 ft-lb using the same sequence.
7. Repeat the torque sequence to confirm that none have changed from 80 ft-lb. If any are found below 80 ft-lb, repeat complete sequence until there is no change in torque values. If possible, drive the machine prior to checking torques.
8. Check torque values after 8 hours of operation and then at weekly intervals.

Engine

5.2-1 Kubota Dual Fuel (DF972) Resistance Checks

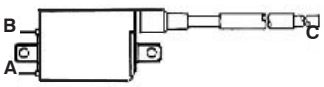
Resistance of Pick-Up Sensor



1. Disconnect the connector.
2. Measure the resistance with the ohmmeter.
3. If the resistance is not within the factory specifications, replace it.

Resistance	Factory Spec.	**A - B**	1.85 to 2.45kΩ at 20°C

Resistance of Ignition Coil

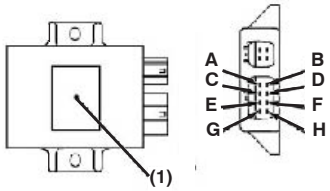


1. Disconnect the connector.
2. Measure the resistance with an ohmmeter.
3. If the resistance is not within the factory specifications, replace it.

Resistance	Factory Spec.	**A - B**	1.87 to 2.53Ω at 20°C
		A - C	10.4 to 15.6Ω at 20°C

A: Terminal (+) C: High Tension Cord
B: Terminal (-)

Resistance of Ignitor



1. Disconnect the connector.
2. Measure the resistance with an ohmmeter.
3. If the resistance is not within the factory specifications, replace it.

Important:
To replace the ignitor with a service part, make sure the ignitor has the same part cord No /ID mark as the old one. (See the information label (1).)

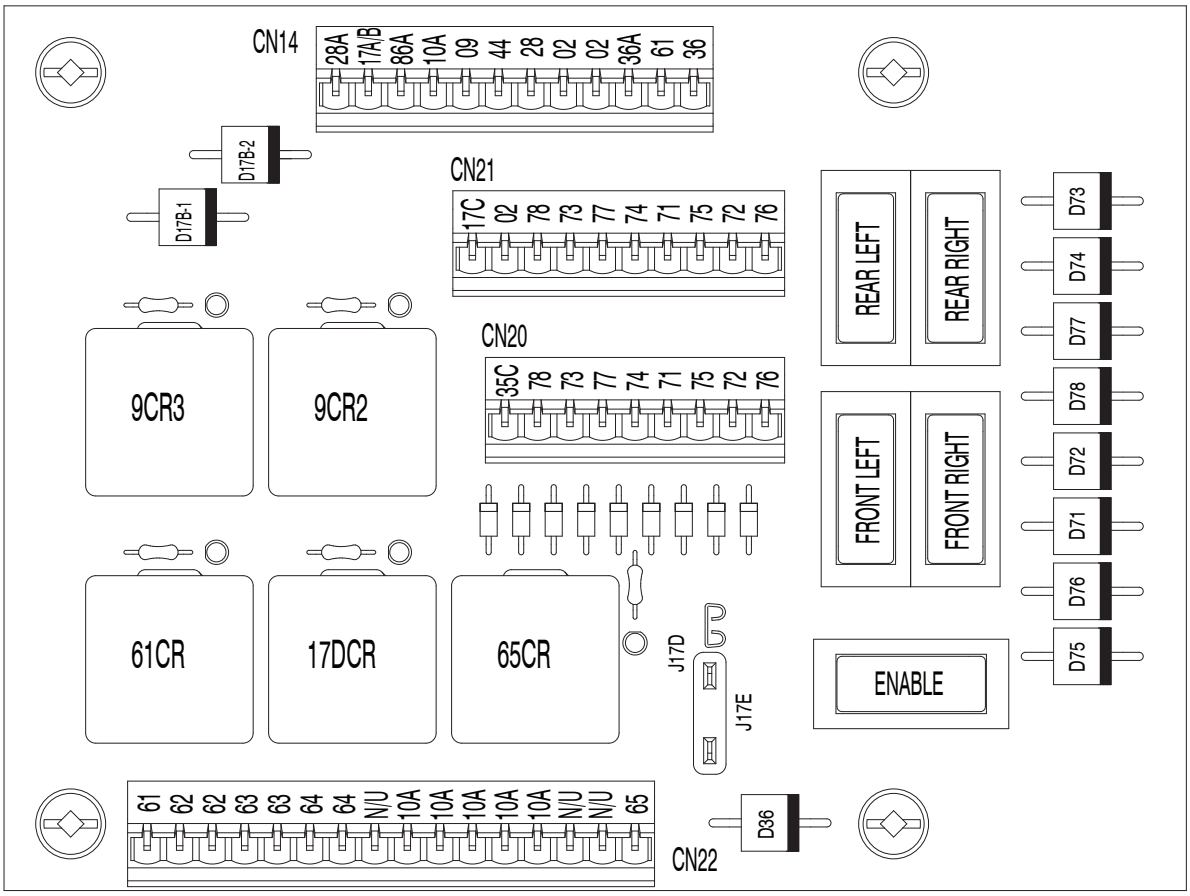
Ignitor Check Chart

Negative Positive	A	B	C	D	E	F	G	H
A		10 to 40 kΩ	10 to 40 kΩ	11 to 47 kΩ	infinity	infinity	infinity	infinity
B	10 to 40 kΩ		0.33 to 1.3 kΩ	1.8 to 7.3 kΩ	infinity	infinity	infinity	infinity
C	10 to 40 kΩ	0.33 to 1.3 kΩ		1.5 to 6.0 kΩ	infinity	infinity	infinity	infinity
D	11 to 47 kΩ	1.8 to 7.3 kΩ	1.5 to 6.0 kΩ		infinity	infinity	infinity	infinity
E	infinity	infinity	infinity	infinity		infinity	infinity	infinity
F	2 megohm (minimum)	2 megohm (minimum)	2 megohm (minimum)	2 megohm (minimum)	infinity		infinity	infinity
G	2 megohm (minimum)	2 megohm (minimum)	2 megohm (minimum)	2 megohm (minimum)	infinity	infinity		infinity
H	2 megohm (minimum)	2 megohm (minimum)	2 megohm (minimum)	2 megohm (minimum)	infinity	infinity	infinity	

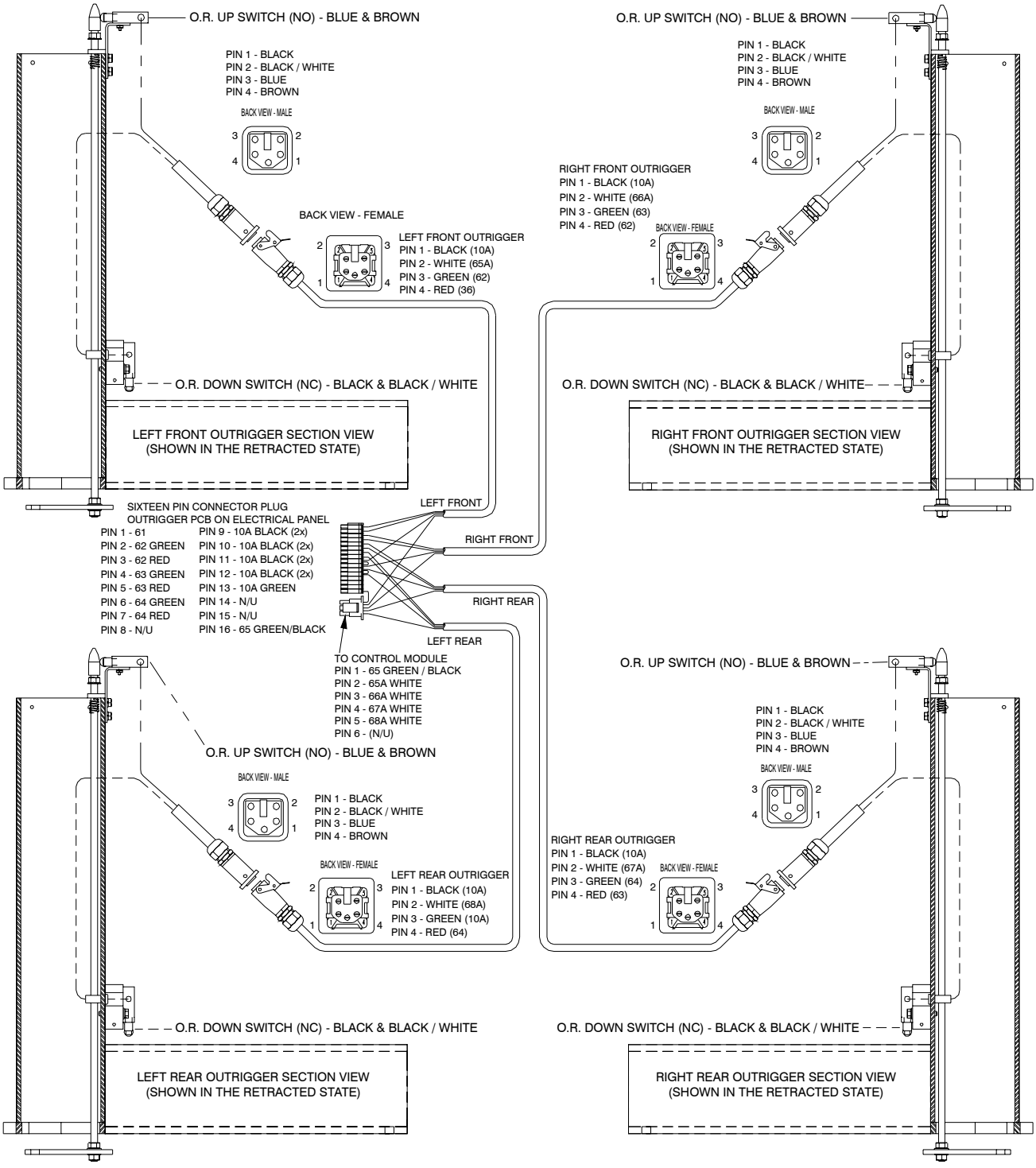
60434AA

Options

5.3-1 Auto-Leveling Outrigger PC Board Layout



5.3-2 Outrigger Mechanical Limit Switch Wiring Diagram


O.R. UP SWITCH (NO) - BLUE & BROWN
PIN 1 - BLACK
PIN 2 - BLACK / WHITE
PIN 3 - BLUE
PIN 4 - BROWN
BACK VIEW - MALE
BACK VIEW - FEMALE
LEFT FRONT OUTRIGGER
PIN 1 - BLACK (10A)
PIN 2 - WHITE (65A)
PIN 3 - GREEN (62)
PIN 4 - RED (36)
RIGHT FRONT OUTRIGGER
PIN 1 - BLACK (10A)
PIN 2 - WHITE (66A)
PIN 3 - GREEN (63)
PIN 4 - RED (62)
O.R. DOWN SWITCH (NC) - BLACK & BLACK / WHITE
LEFT FRONT OUTRIGGER SECTION VIEW
(SHOWN IN THE RETRACTED STATE)
RIGHT FRONT OUTRIGGER SECTION VIEW
(SHOWN IN THE RETRACTED STATE)
SIXTEEN PIN CONNECTOR PLUG
OUTRIGGER PCB ON ELECTRICAL PANEL
PIN 1 - 61
PIN 2 - 62 GREEN
PIN 3 - 62 RED
PIN 4 - 63 GREEN
PIN 5 - 63 RED
PIN 6 - 64 GREEN
PIN 7 - 64 RED
PIN 8 - N/U
PIN 9 - 10A BLACK (2x)
PIN 10 - 10A BLACK (2x)
PIN 11 - 10A BLACK (2x)
PIN 12 - 10A BLACK (2x)
PIN 13 - 10A GREEN
PIN 14 - N/U
PIN 15 - N/U
PIN 16 - 65 GREEN/BLACK
LEFT FRONT
RIGHT FRONT
RIGHT REAR
LEFT REAR
TO CONTROL MODULE
PIN 1 - 65 GREEN / BLACK
PIN 2 - 65A WHITE
PIN 3 - 66A WHITE
PIN 4 - 67A WHITE
PIN 5 - 68A WHITE
PIN 6 - (N/U)
LEFT REAR OUTRIGGER
PIN 1 - BLACK (10A)
PIN 2 - WHITE (68A)
PIN 3 - GREEN (10A)
PIN 4 - RED (64)
RIGHT REAR OUTRIGGER
PIN 1 - BLACK (10A)
PIN 2 - WHITE (67A)
PIN 3 - GREEN (64)
PIN 4 - RED (63)
LEFT REAR OUTRIGGER SECTION VIEW
(SHOWN IN THE RETRACTED STATE)
RIGHT REAR OUTRIGGER SECTION VIEW
(SHOWN IN THE RETRACTED STATE)

5.3-3 Auto-Leveling Outrigger Settings and Error Codes

Reading the Codes:

In order to read the fault codes, a sequence of pauses and flashes can be seen on the LED mounted on the outrigger control module. The codes are continuously displayed by the LED until the fault is cleared, the outrigger control module is reset and no longer detects the fault, or idle timeout becomes active.
The sequence is as follows:

1. Half second flashes followed by half second pauses indicate the first digit.
2. A 2.5 second pause.
3. Half second flashes followed by half second pauses indicate the second digit
4. A 5 second pause.

Repeat steps 1-4

Since the outrigger control module only reports one error, only one code can be read from the LED per instance. If the error is cleared and another error is present, it will then be presented.

LED ERROR CODES

EVERYTHING OK	ON
VEHICLE TILTED	1/1
OUTRIGGERS CANNOT BE MOVED !	1/2
OUTRIGGERS NOT HOME	2/2
NOT FULLY LEVEL	2/1
RELEASE OUTRIGGER DEMAND !	5/5
CHECK OUTRIGGER SUPPLY (P4-9)	5/2
CANNOT LEVEL : BAD TILT SENSOR	7/1
OUTRIGGERS MANUALLY CONTROLLED !	6/6
TESTING HWFS	7/8
B+ SUPPLY TOO LOW	5/1
STARTUP !	7/7
FAULT : BAD SLAVE MICRO	7/5
FAULT : BAD TILT SENSOR	7/1
FAULT : BAD HWFS	7/2
FAULT : P2-5 FAULTY	8/1
FAULT : P2-6 FAULTY	8/2
FAULT : P2-8 STUCK ON	8/3
FAULT : P2-8 ALWAYS ON	8/4
FAULT : P2-8 ALWAYS OFF	8/5
FAULT : HWFS STALLED !	7/6

60402AA

5.3-4 Auto-Leveling Outrigger Error Code Breakdown

RELEASE OUTRIGGER DEMAND!	5/5

Check inputs on P2 pins 5 & 6 - the “auto-level” or “auto-retract” input is active at power-on or when it is not allowed to carry out the function.

OUTRIGGERS CANNOT BE MOVED!	1/2

Check input on P2 pin 10 – “auto-level” or “auto-retract” has been requested but the platform is elevated.

NOT FULLY LEVEL	2/1

The outrigger legs are all down (touching the ground) but the platform is not fully level.

OUTRIGGERS NOT HOME	2/2

The outrigger legs are not all down (touching the ground) and also are not all home (fully retracted).

B+ SUPPLY TOO LOW	5/1
CHECK OUTRIGGER SUPPLY (P4-9)	5/2

Check that the battery voltage is not too low.

VEHICLE TILTED	1/1

These is not a true fault – move the vehicle to level ground!

TESTING HWFS	7/8
STARTUP!	7/7

These are not true faults unless they do not clear – the start-up tests should only occur for a short time.

OUTRIGGERS MANUALLY CONTROLLED!	6/6

This is not a true fault – the outriggers are being manually operated (one or more outrigger legs on P4 pins 1-8 is high, when the outrigger control module is not active.

CANNOT LEVEL (BAD TILT SENSOR)	7/1
FAULT: BAD TILT SENSOR	7/1
FAULT: BAD HWFS	7/2
FAULT: BAD SLAVE MICRO	7/5
FAULT: HWFS STALLED!	7/6
FAULT: P2-5 FAULTY	8/1
FAULT: P2-6 FAULTY	8/2
FAULT: P2-8 STUCK ON	8/3
FAULT: P2-8 ALWAYS ON	8/4
FAULT: P2-8 ALWAYS OFF	8/5

60412AB

These are internal faults. If the fault persists after the power has been reset, the outrigger control module may need to be replaced.

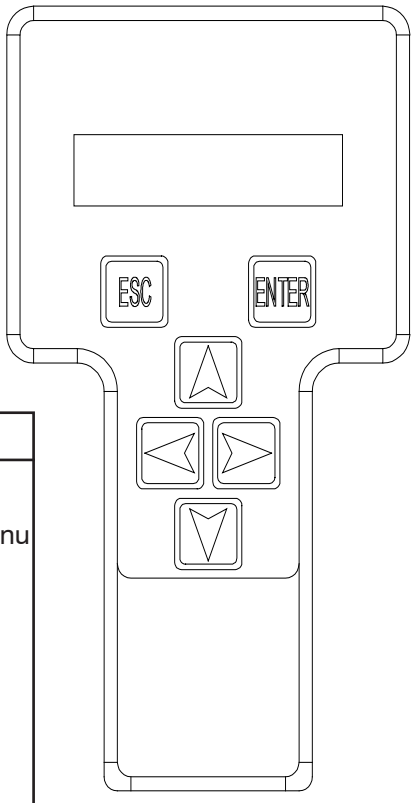
5.3-5 Hand Held Calibration/Diagnostic Tool Key Functions

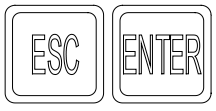
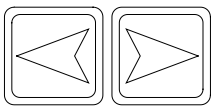
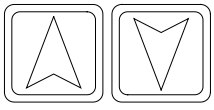
WARNING

Only trained and authorized personnel shall be permitted to service an aerial platform.

WARNING

Read all instructions closely before attempting each phase of this procedure.



SYMBOL	KEY FUNCTIONS
	**ESC/ENTER BUTTONS** To move back and forth between menu and sub-menu
	**LEFT/RIGHT BUTTONS** Select menus and setting to be adjusted
	**UP/DOWN BUTTONS** Adjust setting values

Outrigger Settings

Model	6826RT	6832RT
O.R. Settings	7	7

5.3-6 Outrigger Control Module Instructions

When EZcal hand-held device is connected to the OCM1 control module, a two line displays shows various menus and settings. At any time the top line of the display describes the currently selected menu and the bottom line shows the currently selected item in that menu.

Six buttons on **EZcal** allow easy navigation through the menus:

- ← and → change the selected item (the bottom line display)
- ENTER enters the selected new menu when available (top line display changes)
- ↑ and ↓ adjusts the selected item when available
- ESC exits the current menu back to the previous menu

TOP LEVEL MENU OPTIONS

HELP	Select this menu to see a description of current OCM1 status
DIAGNOSTICS	Select this menu to see switch input status & logged data
ACCESS LEVEL	Select this menu & enter correct code to enable adjustments and calibrations
ADJUSTMENTS	Select this menu to see and adjust OCM1 settings NOTE: this menu provides for adjustments which might be needed for different work activities
SETUPS	Select this menu to carry out initial set-up of the OCM1 NOTE: this menu provides for set-ups which are needed to configure the OCM1 for a particular vehicle

HELP MENU OPTIONS

(help message)	A message displays current OCM1 status, indicating if everything is OK or if there is an error code (see LED Error Codes - Table 5.3)

DIAGNOSTIC MENU OPTIONS

SYSTEM	Select this menu to see general OCM1 system information
SWITCHES	Select this menu to see switch input status
OUTPUTS	Select this menu to see OCM1 output status
LOG	Select this menu to see logged information

DIAGNOSTIC / SYSTEM MENU OPTIONS

OUTRIGGERS	Displays various status during the auto-level function
TILT	Displays vehicle tilt in “X” and “Y” orientations measured by integral sensor
TILTED	Displays whether vehicle is tilted (YES or NO)
BATTERY	Displays battery supply voltage (on P2-12)

DIAGNOSTIC / SWITCHES MENU OPTIONS

LR/P2-1	High when the left rear outrigger is in contact with the ground
RR/P2-2	High when the right rear outrigger is in contact with the ground
RF/P2-3	High when the right front outrigger is in contact with the ground
LF/P2-4	High when the left front outrigger is in contact with the ground
EXTEND/P2-5	High to activate the auto-level function
RETRACT/P2-6	High to activate the auto-retract function
ELEV/P2-10	High when the scissor stack is stowed (“elevated” input indicates that the vehicle is stowed).

DIAGNOSTIC / OUTPUTS MENU OPTIONS

LAMP/P2-7	Displays state of outrigger control box light
STABLE/P2-8	Displays state of stable (all legs touching the ground) output
TILT/P2-9	Displays state of tilt
LRe/P4-1	Displays state of left rear outrigger extend valve
RRe/P4-2	Displays state of right rear outrigger extend valve
RFe/P4-3	Displays state of right front outrigger extend valve
LFe/P4-4	Displays state of left front outrigger extend valve
LRr/P4-5	Displays state of left rear outrigger retract valve
RRr/P4-6	Displays state of right rear outrigger retract valve
RFr/P4-7	Displays state of right front outrigger retract valve
LFr/P4-8	Displays state of left front outrigger retract valve
P4-9 MON	Displays the voltage to the outrigger valve (can only be seen when operating in auto-level or retract)

DIAGNOSTIC / LOG MENU OPTIONS

MAX.BATTERY	Displays maximum recorded battery supply voltage
OCM1 version	Displays part number and software version of GP106
EZcal version	Displays software version of EZcal

ACCESS LEVEL MENU OPTIONS

CODE xxxx	"ACCESS LEVEL" 3 (allows viewing only) "ACCESS LEVEL" 2 (allows setup on OCM1)

ADJUSTMENTS MENU OPTIONS (factory set - not adjustable)

Xtilt TRIP	Displays the tilt trip point in the "X" orientation
Ytilt TRIP	Displays the tilt trip point in the "Y" orientation
TILT ENTRY	Displays the tilt delay time
TILT EXIT	Displays the tilt delay time
Xlevel TRIP	Displays the tilt trip point in the "X" orientation during the auto-level function
Ylevel TRIP	Displays the tilt trip point in the "Y" orientation which applies during the auto-level function

MACHINE SETUP MENU OPTIONS (factory set - not adjustable)

DEFAULTS	Allows all adjustments & machine settings to be set to defaults WARNING: all GP106 settings will be changed; use with caution!
CALIBRATE LEVEL	Allows levelling of the integral tilt sensor of the GP106, when the vehicle is positioned on level ground (see Appendix Four)
TILT MODE	Allows configuration of the GP106 tilt output (P2-9): 1 – output turns on to light lamp when tilted 2 – output turns off to cutout functions when tilted 3 – output turns off to cutout functions when tilted AND elevated
TILT FILTER	Displays the filter applied to the tilt measurements during the auto-level function (used to minimize the effect of vehicle vibrations on the tilt measurement)
Xlevel TARGET	Displays the tilt in the "X" orientation at which the auto-level function will complete.
Ylevel TARGET	Displays the tilt in the "Y" orientation at which the auto-level function will complete.
tilt SLACK	Displays the amount of vehicle tilt exceeding the Xtilt TARGET and/or Ytilt TARGET in which the auto-level function will not attempt to level EXAMPLE: Xtilt TARGET=0.3°, Ytilt TARGET=0.7°, tilt SLACK=0.5° If machine is tilted to 1.0° in the X and Y orientations, the auto-level function will attempt to level the X orientation (0.3+0.5<1.0) but will not attempt to level the Y orientation (0.7+0.5>1.0) RANGE: 0.0° to 1.0°, default 0.3°

IMPORTANT

Each phase must be completed before the next phase can be carried out.
All phases must be completed before the aerial platform can be operated.
Always follow the instructions of the Calibration instrument.

1. Ensure aerial platform is parked on a firm and level surface.

2. Elevate the scissors high enough to lay a level accross the base tubes. Ensure there is no debris on the base and the level sits flat. Do not elevate aerial platform higher than the high speed/tilt override limit switch.

3. Manually operate the outriggers and level the machine in 4 places: left side, right side, front and rear. All 4 outriggers must be firmly placed and all 4 tires are off the ground.

4. Double check that the aerial platform is level at all 4 points.

5. Connect the EZcal tool to the P1 connector on the **CONTROL MODULE**.

6. The display will show "**Help: Press Enter**".
   By using Left/Right buttons, select the "**Access Level (3)**" from the menu and press the **ENTER** button.

7. The display will show "**Access Level: Code (0000)**".
   By using the Up/Down buttons, enter the Access Level Code (1 ➔1 ➔ 2 ➔ 2) followed by pressing the **ENTER** button.

8. The display will show "**Access Level 2**".
   By using Left/Right buttons, select the "**Setups**" from the menu and press the **ENTER** button.

9. The display will show "**Setups: Change Defaults**".
   Select the "**Change Defaults**" from the menu and press the **ENTER** button.

10. The display will show "**Defaults, 0 = Custom**".
    By using Up/Down buttons, select the "Defaults: Code Setting for your Model (For Default Code Refer to Table 5-3)" from the menu and press the **ENTER** button and followed by **ESCAPE** button.

11. The display will show "**Setups Change Defaults**".
    By using Left/Right buttons, select the "**Calibrate Level**" from the menu and press the **ENTER**.

12. The display will show "**Calibrate Level: Yes: Enter, No: ESC**".
    Select the "**Yes**" from the menu by press the **ENTER** button.

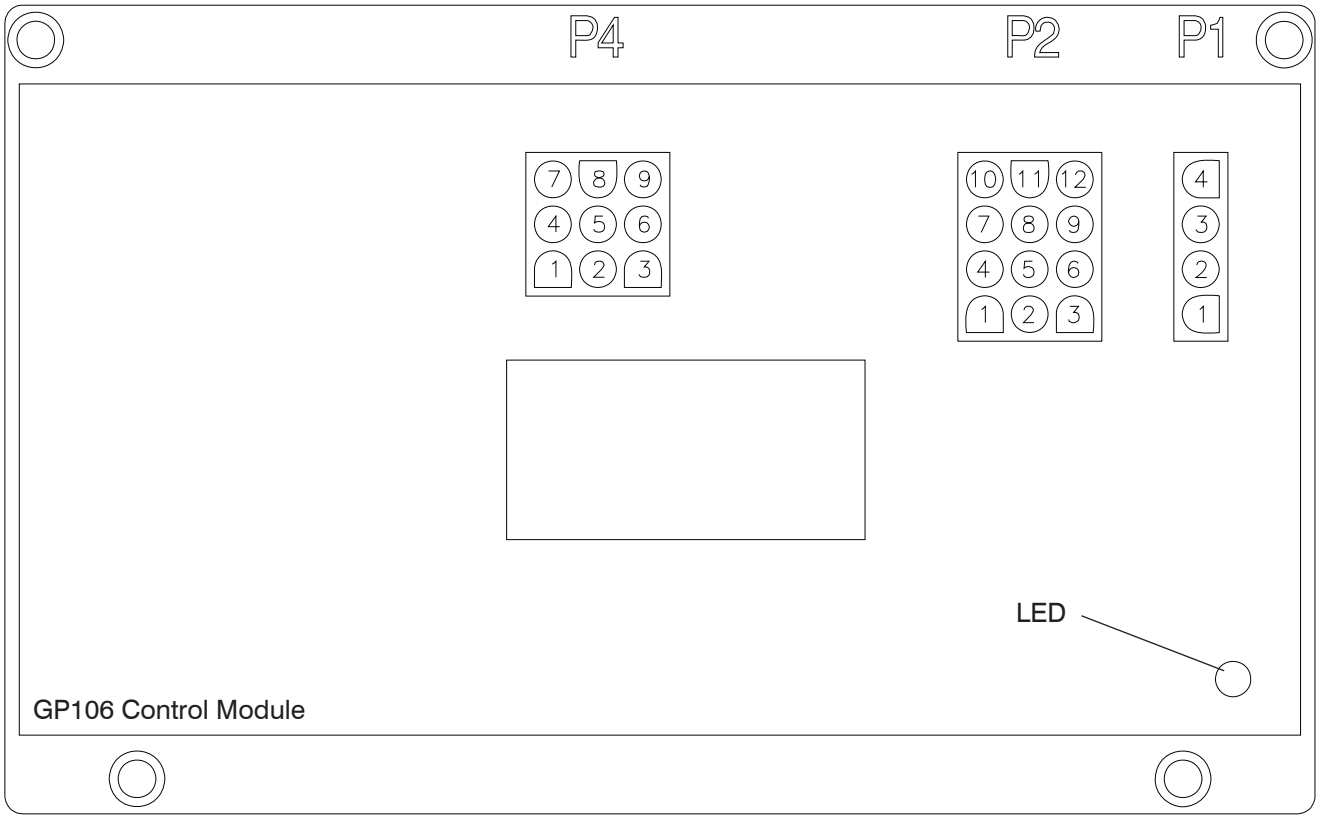
13. The display will show "**Calibrate Level: Tilt 0.0' , 0.0'**".
    Select the "**ESCAPE**" from the menu once.

14. The display will show "**Setups Calibrate Level**".
    Select the "**ESCAPE**" from the menu once again.

15. The Calibration procedure is complete, unplug and remove the EZ-Cal.

16. Close the hydraulic/electric cabinet.

5.3-7 Auto-Leveling Outrigger Control Module Pin Reference Chart

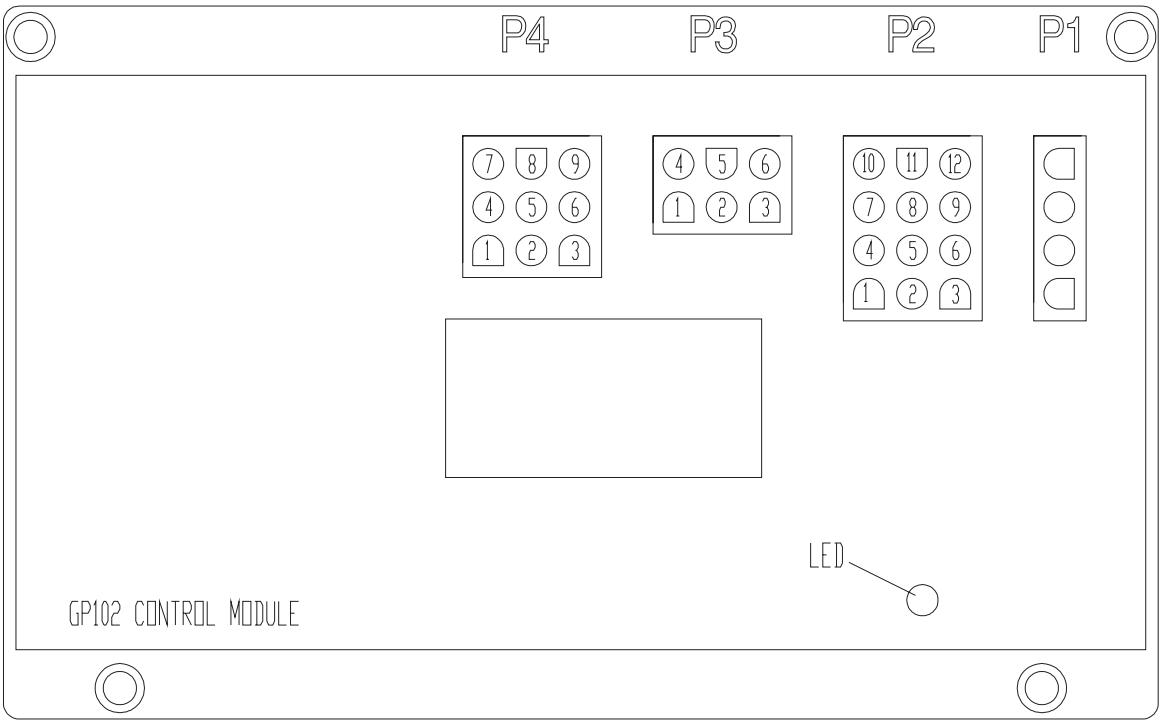


PLUG	PIN #	WIRE # AND COLOUR	WIRE FUNCTION
P1	The Calibration Connection		
P2	1	68A White	Input indicating that the LEFT REAR outrigger is in contact with the ground
P2	2	67A Red/White	Input indicating that the RIGHT REAR outrigger is in contact with the ground
P2	3	66A Blue/White	Input indicating that the RIGHT FRONT outrigger is in contact with the ground
P2	4	65A Green/White	Input indicating that the LEFT FRONT outrigger is in contact with the ground
P2	5	70 Green/Black	Input for AUTO-LEVEL function to extend the outriggers to level the machine
P2	6	79 Green	Input for AUTO-RETRACT function to retract the outriggers until the switch is released
P2	7	70A Red/White	Outrigger Light on Outrigger Control Box
P2	8	65 Green/Black	STABLE output to indicate that all outriggers are in contact with the ground
P2	9	28 Green	TILT output to indicate that the machine is level (ANSI/CSA only)
P2	10	44 Green	Tilt override / High Drive Cutout
P2	11	02 White	Negative Input
P2	12	10A Black	Main Power Input
P4	1	78 Black/White	Output used to extend the LEFT REAR outrigger
P4	2	77 Blue/Black	Output used to extend the RIGHT REAR outrigger
P4	3	76 Red/Black	Output used to extend the RIGHT FRONT outrigger
P4	4	75 Orange/Black	Output used to extend the LEFT FRONT outrigger
P4	5	74 Black	Output used to retract the LEFT REAR outrigger
P4	6	73 Blue	Output used to retract the RIGHT REAR outrigger
P4	7	72 Red	Output used to retract the RIGHT FRONT outrigger
P4	8	71 Orange	Output used to retract the LEFT FRONT outrigger
P4	9	35C White/Black	Power input for outriggers

60401AC

Load Sensing System - CE

5.4-1 Control Module Pin Reference Chart



PLUG	PIN #	WIRE # AND COLOUR	WIRE FUNCTION
P1	The Calibration Connection		
P2	1	Not Used	Not Used
P2	2	10E Black/White	Input Power From Base Terminal Strip To Confirm Lower Control Is Selected
P2	3	14 Black	Raise Platform Input
P2	4	13 Orange	Lower Platform Input
P2	5	Not Used	Not Used
P2	6	Not Used	Not Used
P2	7	16 White/Black	Forward Direction Input
P2	8	15 Blue	Reverse Direction Input
P2	9	Not Used	Not Used
P2	10	35B Red/Black	Input From LS1 High Speed Limit Switch To Verify ON/OFF Limits
P2	11	02 White	Negative Input From Base Terminal Strip
P2	12	10A Red	Main Power Input From Base Terminal Strip
P3	1	22 Red	Output To FL-22 Flashing Light
P3	2	29 Black	Output To BP-29 Beeper
P3	3	60 Black/White	Output To Overload Warning Light On Control Box
P3	4	28 Green/Black	Output To 28CR1 Tilt Relay And 28CR2 Down Relay
P3	5	02 White	Negative for Flashing Light and Beeper
P3	6	28E Green/White	Output To 28ECR1 Aux. Tilt Relay And 28ECR2 Aux. Down Relay
P4	1	Not Used	Not Used
P4	2	60A Green	Varied Input From Transducer
P4	3	28B Green	Varied Input From Angle Transducer
P4	4	Not Used	Not Used
P4	5	Not Used	Not Used
P4	6	910 Black	Positive Signal To Angle Transducer
P4	7	900 White	Negative Signal To Angle Transducer
P4	8	902 White	Negative Signal To Pressure Transducer
P4	9	910A Black	Positive Signal To Pressure Transducer

60645AA

5.4-2 LED Error Codes - Quick Reference Chart

HELP Message	LED indication
EVERYTHING OK	Steady on
IN GROUND MODE!	Steady on
OVERLOAD FUNCTIONS DISABLED!	6/6
VEHICLE TILTED	1/1
VEHICLE OVERLOADED	1/2
WAITING FOR B+ ON P2-12	5/2
ARMGUARD ACTIVE!	1/3
TOO HIGH - DRIVE PREVENTED	1/4
TOO HIGH - LIFT UP PREVENTED	1/5
TESTING HWFS	7/8
IDLE TIMEOUT ACTIVE!	Always off
WAITING FOR NEUTRAL	5/5
ELEVATION SWITCH SHIFTED?	2/1
ELEVATION SWITCH STUCK?	2/2
NO LAST CALDATE!	6/3
LOAD NOT CALIBRATED	6/2
DRIVE/LIFT INPUTS FAULTY!	5/6
UP/DOWN SELECT INPUTS ACTIVE TOGETHER	5/4
INVALID LOAD - CHECK SENSORS	6/4
HEIGHT NOT CALIBRATED	6/1
INVALID HEIGHT - CHECK SENSOR	6/5
EMS INPUTS FAULTY!	5/2
B+ SUPPLY TOO LOW	5/1
P4-1 OR P5-1 SHORT TO 0V?	4/1
P3-4 SHORT TO SUPPLY!	4/2
P3-4 SHORT TO 0V?	4/3
P3-4 SHORT TO SUPPLY?	4/4
P3-6 SHORT TO 0V?	4/5
P3-6 SHORT TO SUPPLY?	4/6
FAULT: BAD TILT SENSOR	7/1
FAULT: BAD HWFS	7/2
FAULT: BAD SLAVE ANALOGS	7/3
FAULT: BAD STRAIN MONITORS	7/4
FAULT: BAD SLAVE MICRO	7/5
FAULT: HWFS STALLED!	7/6
STARTUP!	7/7
FACTORY OVERRIDE	6/7

60405AA

Reading the Codes:
In order to read the fault codes, a sequence of pauses and flashes can be seen on the LED mounted on the GP102 module. The codes are continuously displayed by the LED until the fault is cleared, the GP102 reset and no longer detects the fault, or idle timeout becomes active.

The sequence is as follows:
1. Quarter second flashes followed by quarter second pauses indicate the first digit.

2. A 1.5 second pause.

3. Quarter second flashes followed by quarter second pauses indicate the second digit

4. A 4 second pause. Repeat steps 1-4

Since the GP102 only reports one error, only one code can be read from the LED per instance. If the error is cleared and another error is present, it will then be presented.

5.4-3 LED Error Codes - Code Breakdown Chart

Diagnostic sequence dependant on LED flash code:

No Last Caldate	63
Load Not Calibrated	62
Height Not Calibration	61

An EZcal is required!

Waiting For Neutral	55
Drive/Lift Inputs Faulty!	56
Up/Down Select Inputs Active Together	54
EMS Inputs Faulty!	52

Check inputs on P2 pins 1,2,3,4,5,6,7,8.

P3-4 Short To Supply!	42
P3-4 Short To Supply?	44
P3-6 Short To Supply?	46

Disconnect plug P3. If fault clears there is a problem with the wiring from P3-4 or P3-6 to the rest of the vehicle.

Armguard Active!	23
Elevation Switch Shifted?	21
Elevation Switch Stuck?	22

If the 23 flash code is triggered by armguard, it will occur once then clean. This is not a true fault but just an indication of the reason for the vehicle stop. If the 21 or 22 flash code is triggered by a fault with the elevation switch, it will not clear. Check that the elevation switch correctly opens/closes when the platform is raised/lowered.

P3-4 Short To 0V?	43
P3-6 Short To 0V?	45

Disconnect plug P3. If fault clears there is a wiring fault from P3-4 or P3-6 to the rest of the vehicle.

Invalid Load - Check Sensors	45

Check the voltage out of the pressure transducer, into P4-2. It should be between 0.5V (zero pressure) and 4.5V (maximum pressure) and should vary as the platform load & position varies.

Waiting For B+ on P2-12	52
B+ Supply Too Low	51
P4-1 Or P5-1 Short To 0V?	41

Check that the battery voltage is not too low.
Verify battery voltage on P2-12.
Disconnect plug P4 – if the fault clears there is a wiring fault from P4-1 to the rest of the vehicle.

5.4-4 LED Error Codes - Code Breakdown Chart (Continued)

Vehicle Tilted	11
Vehicle Overloaded	12
Too High - Drive Prevented	14
Too High - Lift Up Prevented	15

These are not true faults but an indication that vehicle movement is prevented. Remove excessive load from the platform. Lower the platform if close to maximum height. Move the vehicle to level ground.

Invalid Height - Check Sensor	65

Check the voltage out of the height transducer, into P4-3. It should be between .4V and 4.6V and should vary as the platform position varies.

Testing HWFS	78
Start Up!	77

These are not true faults unless they do not clear – the start-up tests should only occur for a short time.

Overload Functions Disabled!	66
Factory Override	67

These are not true faults – the GP102 has been configured to suppress overload functionality.

Idle Timeout Active!	Always Off
Fault: Bad Tilt Sensor	71
Fault: Bad HWFS	72
Fault: Bad Slave Analogs	73
Fault: Bad Strain Monitors	74
Fault: Bad Slave Micro	75
Fault HWFS Stalled!	76

Action a function to clear the idle timeout if it occurred. Ensure the GP102 is correctly mounted – incorrect mounting can cause the “bad tilt sensor” diagnostic to occur. Otherwise there may be an internal problem with the GP102.

5.4-6 Control Module Load Calibration - Code Messages & Definitions

During calibration the following failure message may appear:

(Refer to 5.3-5 for hand held calibration/diagnostic tool key functions)

F01: Check HWFS
- This message is given if the GP102 startup tests have not completed. Check HELP message for more information.

F02: Not Ground Mode
- This message is given if the machine is not in ground mode (P2-2 must be high).Calibration can only be carried out in ground mode.

F03: Not Stopped
- This message is given if any function switch is closed. Check DIAGNOSTICS / SWITCHES to see which function switch is closed.

F04: Tilted
- This message is given if the machine is tilted. Calibration must be carried out with the machine level. If the machine is level, use the SETUPS / TILT SETUPS to set the GP102 level.

F05: Bad Height
- This message is given if the height sensor output (P4-3) is out of range at the start of calibration. The height sensor output must be between 0.9V and 4.1V. Check DIAGNOSTICS / SENSORS to see the output. A reading of 0V or 5V is probably due to a wiring problem.

F06: Check Elev
- This message is given if the elevation switch (P210) is open at the start of calibration, when the operator has confirmed the “PLATFORM DOWN?” question. If the platform is down, check the elevation switch wiring.

F08: Check Elev
- This message is given if the elevation switch (P2-10) is closed at the end of calibration, when the platform should be fully raised. This message would occur if the UP switch was accidentally opened near the start of the lift. If the platform is fully raised, check the elevation switch wiring.

F09: Bad Height
- This message is given if the height sensor output (P4-3) is out of range at the start of calibration. The height sensor output must be between 0.9V and 4.1V. Check DIAGNOSTICS / SENSORS to see the output.

F10: Bad Height
- This message is given if the height sensor output (P4-3) is out of range at the end of calibration. The height sensor output must be between 0.9V and 4.1V. Check DIAGNOSTICS / SENSORS to see the output. A reading of 0V or 5V is probably due to a wiring problem.

F11: Not Up
- This message occurs at the start of calibration if the operator selects a function other than UP.

F13: Low Height Range

- This message occurs at the end of calibration if the height sensor output did not change sufficiently to give a reasonably accurate platform height estimate. DIAGNOSTICS / SENSORS can be used to check the height sensor output (P43) when the platform is fully lowered and fully raised; a difference of at least 1V is to be expected. This message could occur if the UP switch was accidentally opened too early (when the platform is not fully raised).

F15: Check Elev

- This message is given if the elevation switch (P2-10) is open when the platform has been fully lowered at the end of calibration. This message would occur if the DOWN switch was accidentally opened before the platform was fully lowered. If the platform is fully lowered, check the elevation switch.

F16: Low Elev.open

- This message is given if the elevation switch (P2 10) opened during lift at a too low height (below 5%). Check CALIBRATIONS / HEIGHT CALS; the “ElevUp” value shows the recorded height where the switch opened.

F17: High Elev.open

- This message is given if the elevation switch (P210) opened during lift at a too high height (above 25%).Check CALIBRATIONS / HEIGHT CALS; the “ElevUp” value shows the recorded height where the switch opened.

F18: Low Elev.close

- This message is given if the elevation switch (P210) closed during lower at a too low height (below 5%).Check CALIBRATIONS / HEIGHT CALS; the “ElevDown” value shows the recorded height where the switch opened.

F19: High Elev.close

- This message is given if the elevation switch (P210) closed during lower at a too high height (above 25%).Check CALIBRATIONS / HEIGHT CALS; the “ElevUp” value shows the recorded height where the switch opened.

F20: Height<>0%

- This message occurs if the platform height is not 0% after the platform has been fully lowered at the end of calibration.The platform must return to the same height each time it is fully lowered. Check DIAGNOSTICS / SYSTEM to check the height.

F28: Bad Height

- This message indicates a problem with the height sensor output (P43) during calibration. The height sensor output must be between 0.9V and 4.1V during calibration and between 0.4v and 4.6v during normal operation. Check DIAGNOSTICS / SENSORS to see the output. A reading of 0V or 5V is probably due to a wiring problem.

F42: Low Pressure

- This message indicates that the pressure is too low (0.5V or less) when the elevation switch opens during calibration. Check DIAGNOSTICS / SENSORS to check the pressure.

F43: High Pressure

- This message indicates that the pressure is too high (4.5V or more) when the elevation switch opens during calibration. Check DIAGNOSTICS / SENSORS to check the pressure.

F44: Low Pressure
- This message indicates that the pressure is too low (0.5V or less) at a measurement point. Check DIAGNOSTICS / SENSORS to check the pressure.

F45: High Pressure
- This message indicates that the pressure is too high (4.5V or more) at a measurement point. Check DIAGNOSTICS / SENSORS to check the pressure.

F46: Check Elev
- This message indicates that the elevation switch opened more than once during calibration lifting.

F47: Check Elev
- This message indicates that the elevation switch closed more than once during calibration lowering.

F48: Bad Pressure
- This message is given if the pressure sensor output (P4-2) is out of range at the start of calibration. The height sensor output must be between 0.5V and 4.5V. Check DIAGNOSTICS / SENSORS to see the output. A reading of 0V or 5V is probably due to a wiring problem.

F52: Too Few!
- This message indicates that not enough measurements were recorded during calibration lifting or lowering.

F98: Out of Range
- This message indicates that the “fine tune” calibration is unacceptable. This probably is due to the wrong load being in the platform (i.e: specifying “EMPTY” if the platform is loaded, or the other way round) or (Having the incorrect pressure transducer installed).

During calibration the following information messages may appear:

Caldate:
- This message is prompting for the date to be entered; it is stored to identify when the machine was calibrated. The last calibrate date can be viewed in DIAGNOSTICS / LOG. Press LEFT & RIGHT to select the flashing digits. Press UP & DOWN to change the flashing digits. Press ENTER when the entry is complete. IMPORTANT: The date 00/00/00 is not allowed!

Finished
- This message confirms that calibration is complete and successful.

Lift Empty
- This message is displayed while the platform is being raised to the next measurement height, when an EMPTY platform is being calibrated.

Lift Loaded
- This message is displayed while the platform is being raised to the next measurement height, when a LOADED platform is being calibrated.

Lifting
- This message is displayed while the platform is being raised, during HEIGHT-only calibration.

Lower Empty
- This message is displayed while the platform is being lowered to the next measurement height, when an EMPTY platform is being calibrated.

Lower Loaded
- This message is displayed while the platform is being lowered to the next measurement height, when an EMPTY platform is being calibrated.

Lowering
- This message is displayed while the platform is being lowered, during HEIGHT-only calibration.

Measuring #
- This message is displayed when the platform is stopped during calibration, when the GP102 takes a measurement. There will be a short delay while the machine is allowed to stabilize after movement is stopped.

Must Go Down!
- This message occurs if the wrong switch is closed when the GP102 is waiting for the platform to be lowered.

Must Go Up!
- This message occurs if the wrong switch is closed when the GP102 is waiting for the platform to be raised.

Platform Down?
- This message is prompting for confirmation that the platform is fully lowered. If necessary the DOWN switch can be activated to lower the platform. Press ENTER to confirm when the platform is fully lowered.

Platform Empty?
- This message is prompting for confirmation that the platform is completely empty.Press ENTER to confirm if the platform is empty.

Platform Loaded?
- This message is prompting for confirmation that the platform is loaded to rated load Press ENTER to confirm if the platform is loaded.

Please Lift
- This message is prompting for the platform to be raised. The UP switch should be closed.

Please Lower
- This message is prompting for the platform to be lowered. The DOWN switch should be closed.

Please Wait
- This message indicates that the GP102 is busy; the delay will be short (no more than 5s).

Total Data:
- This message is displayed at the end of each phase, to confirm the number of measurements recorded by the GP102.

5.4-7 Control Module Load Calibration Procedure

1. Move the aerial platform to a test area where the platform can be elevated to its maximum working height and reach.

2. Ensure the aerial platform is parked on a firm, level surface.

IMPORTANT

Each phase must be completed before the next phase can be carried out.
All phases must be completed before the aerial platform can be operated.

IMPORTANT

Always follow the instructions of the Calibration instrument.

IMPORTANT

Make sure the aerial platform is on BASE mode.

NOTE

To ensure a good and clear contact, clean the wire terminals before attaching the jumper clip.

3. Locate the main manifold inside the hydraulic/electric tray.

4. Disconnect the black wire #14 from the lift coil.

5. Locate the contactor on the electrical panel assembly.

6. The jumper connection must be connected between the contractor (wire #19B) and the lift coil (instead of the black wire #14)

7. Connect the Easy-Cal tool to the P1 connector on the CONTROL MODULE.

8. The display will show "**Help: Press Enter**".
   By using Left/Right buttons, select the "Access Level (?)" from the menu and press the **ENTER** button.

Contact Skyjack Service Department at:
(44) 1691-676 236 for your Access Level Code Number.

9. The display will show "**Access Level Code (xxxx)**".
   By using the Up/Down buttons, enter the Access Level Code (xxxx) followed by pressing the **ENTER** button.

10. The display will show "**Access Level 2**".
    By using Left/Right buttons, select the "Setups" from the menu and press the **ENTER** button.

11. The display will show "**Machine Defaults**".
    Select the "Machine Defaults" from the menu and press the **ENTER** button.

12. The display will show "**Defaults, 0 = Custom**".
    By using Left/Right buttons, select the "**X = Group Code**" from the menu and press the **ENTER** button.

13. The display will show "**X=GROUP CODE**". (Refer to 5.4-8 for group code)
    By using the Up/Down buttons, enter the "Group Code (?)" then by using Left/Right buttons, select the "**Curve**" from the menu.

14. The display will show "**X=CURVE**". (Refer to 5.4-8 for curve code)
    By using the Up/Down buttons, enter the "Curve Code (?)" followed by pressing the **ESCAPE** button.

15. The display will show "**Machine Defaults**".
    By using Left/Right buttons, select the "Tilt Setups" from the menu and press the **ENTER** button.

16. The display will show "**Tilt Setups: Calibrate Level**".
    Select the "**Tilt Setups: Calibrate Level**" from the menu and press the **ENTER** button.

17. The display will show "**Calibrate Level: Yes: Enter, No: ESC**".
    Select the "Yes" from the menu by press the **ENTER** button.

18. The display will show "**Calibrate Level: Tilt 0.0' , 0.0'**".
    Select the "**ESCAPE**" from the menu once.

19. The display will show "**Tilt Setups Calibrate Level**".
    Select the "**ESCAPE**" from the menu once again.

20. The display will show "**Setups Tilt Setups**".
    By using Left/Right buttons, select the "Load Setups" from the menu and press the **ENTER** button.

21. The display will show "**Load Setups: Calibrate Load**".
    Select the "**Load Setups: Calibrate Load**" from the menu and press the **ENTER** button.

22. At this point, elevate the aerial platform at full height, check the harness and making sure it is not stretched tight, then lower down the platform.

23. The display will show "**Calibrate Load: Platform Down?**".
    Asking for confirmation that the platform is fully lowered?
    Check that the platform is fully lowered then press the **ENTER** button to confirm.

24. The display will show "**Calibrate: Loaded Empty? No**".
    Asking for confirmation that the platform is empty?
    Check that the platform is empty

25. By using the Up/Down buttons, enter the "Yes" followed by pressing the **ENTER** button.

26. The display will show "**Calibrate Load: Please Lift.....**".
    Waiting for the lift switch to be activated.

27. Hold the lift switch and keep holding it until the platform is fully elevated.

IMPORTANT

If the lift switch is released earlier than full-height position, the calibration will have to be aborted and repeated from the beginning!

28. When the system detects the lift switch closed, the display will show "**Calibrate Load: Lift Empty**".

29. After a delay, the system will stop the platform lifting and will take height & pressure measurements; the display will show "**MEASURING # xx**" When the measurements have been taken, the platform will resume lifting.

NOTE

The Lifting.....stopping.....measuring....lifting process will continue until the platform reaches full height.

30. When the platform reaches full height release the lift switch.

31. The display will briefly show "**TOTAL DATA: 04**" to indicate the number of measurements taken.

32. The display will show "**Calibrate Load: Please Lower.....**".

IMPORTANT

If the lower switch is released earlier than full-lower position, the calibration will have to be aborted and repeated from the beginning!

33. Hold the lower switch and keep holding it until the platform is fully lowered.

34. When the system detects the lower switch closed, the display will show "**Calibrate Load: Lower Empty**"

35. After a delay, the system will stop the platform lowering and will take height & pressure measurements; the. display will show "**MEASURING #xx**". When the measurements have been taken, the platform will resume lowering.

NOTE

The lowering.....stopping.....measuring....lowering process will continue until the platform is fully lowered.

36. When the platform is fully lowered (and height 0% is displayed), release the lower switch.

37. The display will show briefly "**TOTAL DATA: 04**" to indicate the number of measurements taken.

38. The display will show "**Calibrate Load: Caldate: mm/dd/yy**".
    It is recommended that the current date be entered here to provide easy taking of the data of last calibration.
    The current date must be entered using the **LEFT/RIGHT** and **UP/DOWN** buttons.

39. Press ENTER to complete date entry (the system will store it).

40. The display will show "**Calibrate Load**" option.

41. Press the ESC button to exit the "**Calibrate Load**" option.

42. Remove the jumper wire and re-connect the black wire #14 to the coil removed earlier.

43. Close the hydraulic/electric tray.

NOTE

Continuing partially complete load calibration.

Once a calibration phase has been successfully completed, it is not required to do it again (unless of course a change to the vehicle such as a replacement sensor requires that calibration be repeated). This is useful if the calibration procedure is interrupted – the remaining phases can be completed at a later time.

If a calibration phase has been successfully completed, a "**REDO**" message is displayed:
REDO DYNAMIC: NO
REDO LOADED: NO
REDO EMPTY: NO

If the phase does not need to be repeated, just press **ENTER** to move on.
If the phase does need to be repeated, press **UP** or **DOWN** to change "**NO**" to "**YES**" then press **ENTER**.

5.4-8 Curve/Group Codes Chart

Model	Number of Extension Decks	Curve Code	Group Code
7027/7127	1 Manual Extension Deck	24	7
7027/7127	1 Powered Extension Deck	25	7
7135	1 Manual Extension Deck	26	7
7135	1 Powered Extension Deck	27	7
8831	No Extension Deck	30	9
8831	1 Manual Extension Deck	31	9
8831	1 Powered Extension Deck	32	9
8831	2 Manual Extension Decks	33	9
8831	2 Powered Extension Decks	34	9
8841	No Extension Deck	40	10
8841	1 Manual Extension Deck	41	10
8841	1 Powered Extension Deck	42	10
8841	2 Manual Extension Decks	43	10
8841	2 Powered Extension Decks	44	10
9250	No Extension Deck	52	10
9250	1 Powered Extension Deck	53	10
9250	2 Powered Extension Decks	54	10
6832RT	1 Manual Extension Deck	56	15
6826RT	1 Manual Extension Deck	57	15

60403AC

Reliable lift solutions by people who care.

www.skyjack.com